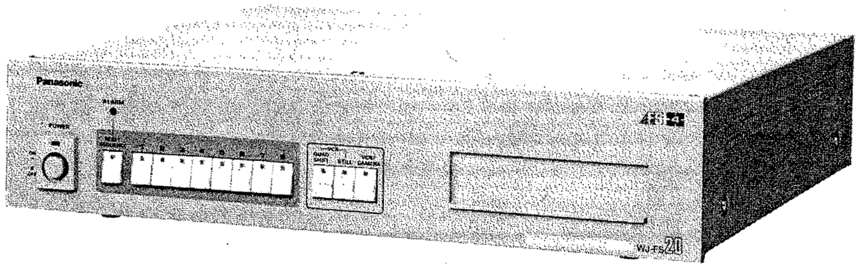
ORDER NO. AVS9307739C8

Service Manual

Video Multiplexer

WJ-FS20



SPECIFICATIONS

Power Source :	220 - 240 VAC 50Hz
Power Consumption :	20 W
Camera Input :	X8 (BNC) 2:1 interlaced VBS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Playback Input :	X1 (BNC) VBS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Gen-Lock Input :	X1 (BNC) VS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Monitor Output :	X1 (BNC) VBS 1.0Vp-p/75ohms
Recording Output :	X1 (BNC) VBS 1.0Vp-p/75ohms
Sync Output :	X1 (BNC) BBS 0.45Vp-p/75ohms
Camera Switching Input :	X1 RCA pin jack
Alarm Input :	X8
Alarm Output :	X1 Open-collector 24VDC 100mA max.
Alarm Recover Input :	X1
Alarm Recover Output :	X1 VTR/Open-collector switchable
Time Adjustment Input:	X1
Operating Temperature :	-10°C - +50°C
Operating Humidity :	Less than 90%
Dimensions :	420(W) x 88(H) x 350(D) mm
Weight :	5.5 kg

Dimensions and weight are approximate.
Specifications are subject to change without notice.

STANDARD ACCESSORIES

Rack Mount Angle	2 pcs.
Screws (M4 x 10)	4 pcs.

Panasonic

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICEING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsuland voltage within the unit may have suificient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that impotant literature concerning the operation and maintenance of this has been included.
Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the " ⚠ " mark on the schematic diagram and the replacement parts list It is essential that these critical parts should be repleced with manufacture's specilied parts to prevent shock, fire, or other hazards
Do not modify the original design without permission of manufacture

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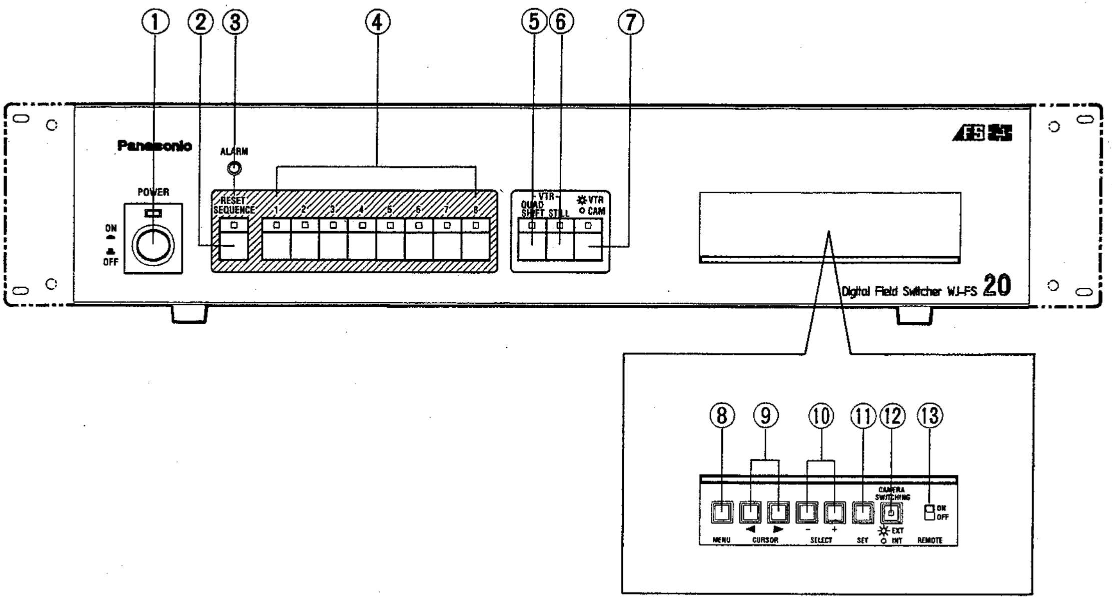
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS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Panasonic
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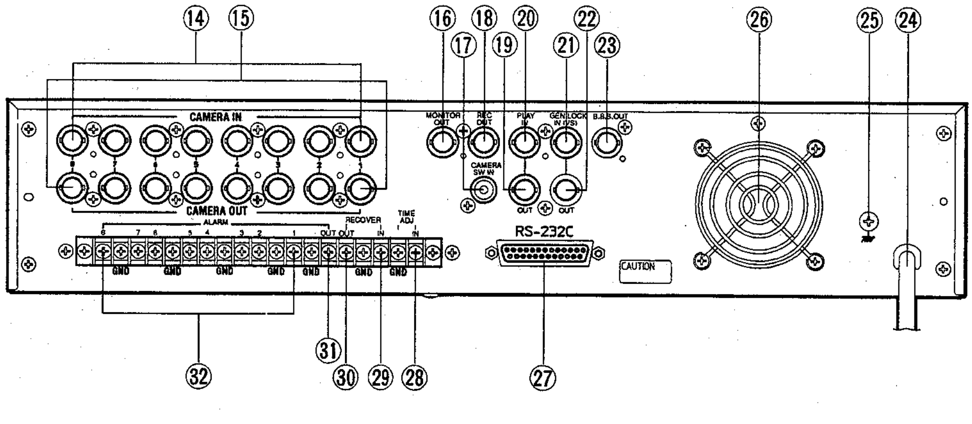
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CAMERA IN
CAMERA OUT
MONITOR OUT
REC OUT
PLAY IN
GENLOCK IN (V/S)
B.B.S.OUT
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ALARM
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CAUTION
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1. **Power ON/OFF Switch (POWER ON/OFF)**

2. **Sequence/Alarm Reset Button (RESET/ SEQUENCE)**
   This button has two modes, the Sequence mode and Alarm Reset mode.
   - Sequence mode : The LED is turned on and the unit is in sequence mode when pressing this button.
   - Alarm Reset mode : The LED is turned off and the alarm mode will be canceled when pressing this button.

3. **Alarm Indicator (ALARM)**
   When the unit is in the alarm mode, this indicator starts blinking.

4. **Camera Selection Button (1/2/•••/7/8)**
   The desired camera can be selected by pressing one of these buttons (so called Spot mode). The LED on the corresponding button is turned on.

5. **Quad Shift Button (VTR/QUAD SHIFT)**
   This button will be used when the Time Lapse VTR is in playback mode.
   - The single playback picture turns to quad playback picture by pressing this button once. The LED is turned on.
   - The first quad picture turns to second quad picture by pressing this button again. The first quad picture and the second quad picture will be seen in turns by pressing this button continuously.The LED stays on.

6. **Still Button (STILL)**
When the Still picture is obtained, this button is used with other buttons.

7. **VTR/Camera Selection Button (VTR/CAM)**
Either the camera picture or the Time Lapse VTR playback picture can be selected by pressing this button.
- LED On : Time Lapse VTR playback picture through function of WJ-FS20
- LED Off : Camera picture
- LED Blinking : Time Lapse VTR playback picture looping through via WJ-FS20

8. **Menu Button (MENU)**
This button should be pressed to enter the menu mode or escape from the menu mode.

9. **Cursor Button (CURSOR)**
This button is used to change the position of the cursor in the menu mode.
- (◄): Moves to left, up and previous menu.
- (►): Move to right, down and next menu.

10. **Select Button (SELECT)**
This button is used to search the character or choose the value from table in the menu mode.
- (+) button : proceeds forward
- (–) button : proceeds backward

11. **Set Button (SET)**
This button is used to fix the item of the menu or to open the specific menu.

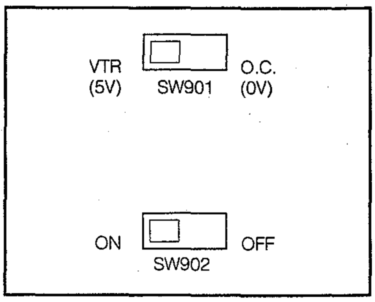
12. **Time Lapse Recording/Normal Recording Selection Button (CAMERA SWITCHING INT/EXT)**
Either the Time Lapse Recording mode or Normal Recording mode can be selected by pressing this button.
- LED On (EXT) : Time Lapse Recording mode.
  Notes:
  1. Camera switching command signal is supplied by Time Lapse VTR.
  2. In case the unit is in alarm mode, LED is turned off and the recording mode changes to Normal Recording mode.
- LED Off (INT) : Normal Recording mode.
  Notes:
  1. Camera switching command signal is generated by this unit.
  2. The recording speed of the Time Lapse VTR should be set to 3 hours recording mode.

13. **Remote On/Off Switch (REMOTE)**
This switch is used when the remote control operation is needed.
When the remote control is to be operated, turn this switch to the ON position. If not, keep this switch to the OFF position.
ON : RS-232C control signal should be supplied to this unit.
The buttons on the front panel will be disabled except buttons on the sub-panel.
OFF : Keep always to the OFF position without remote control operation.

14. **Camera Input Connectors (CAMERA IN)**
The camera signals are connected to these connectors. When connecting a coaxial cable to the Camera Output Connectors (15), the high impedance video loop is automatically selected. At all other times, these connectors are automatically terminated with 75 ohms.
Note: In WJ-FS20,the specific control signal is added on the Vertical Blanking for Time Lapse VTR recording so that any other control signals located on the Vertical Blanking can not be acceptable for the WJ-FS20.

15. **Camera Output Connectors (CAMERA OUT)**
A looping through of input camera signals are provided at these connectors. When connecting a coaxial cable to this connector, the high impedance video loop is automatically selected.

16. **Monitor Output Connector (MONITOR OUT)**
A composite video signal is provided to this connector for monitoring. The sequential switching picture, Time Lapse VTR playback picture and setting up of Menus are displayed.
Note: When switching (sequential) the non-synchronized camera signals, the picture may be disturbed. To hide the disturbance, the disturbed picture period can be masked by the black signal. When switching (sequential) the synchronized camera signals, the picture will not be disturbed, that is, no masking is necessary. The black signal is switched on and off by SW902 located in the unit.



SW901: Switched to VTR position at factory.

SW902: Switched to ON position at factory.

<Front>

17. **Camera Switching Signal Input Connector (CAMERA SW IN)**
The camera switching signal from Time Lapse VTR is supplied to this connector.

18. **Recording Output Connector (REC OUT)**
The recording signal for the Time Lapse VTR is provided via this connector.

19. **Playback Input Connector (PLAY IN)**
The playback signal from Time Lapse VTR is supplied to this connector. When connecting a coaxial cable to the Playback Output Connector (20), the high impedance video loop is automatically selected. At all other times, this connector is automatically terminated with 75 ohms.

Note: If the character is added on the picture generated by the Time Lapse VTR, be sure to insert the character on the video signal portion. If it is added on the Vertical Blanking period, the control signal of WJ-FS20 will be disturbed.

20. Playback Output Connector (PLAY OUT)
A looping through of Time Lapse VTR playback signal is provided at this connector. When connecting a coaxial cable to this connector, the high impedance video loop is automatically selected.

21. Gen-Lock Signal Input Connector (GEN-LOCK IN(VS))
This connector is used to receive VS signal (Video & Sync) as a Gen-Lock signal.When connecting a coaxial cable to the Gen-Lock Output Connector (22), the high impedance Gen-Lock loop is automatically selected. At all other times, this connector is automatically terminated with 75 ohms.

Note:

1. The subcarrier signal (SC) of the WJ-FS20 will not be synchronized with VS signal.
2. Do not supply jittery signal such as line-locked VS-signal or VTR playback signal.

22. Gen-Lock Signal Output Connector (GEN-LOCK OUT(VS))
A looping through of Gen-Lock input signal is provided at this connector. When connecting a coaxial cable to this connector, the high impedance Gen-Lock loop is automatically selected.

23. Black-Burst Signal Output Connector (BBS OUT)
The Black-Burst Signal for use with the synchronization of the system is provided via this connector to other products.

24. Power Cord

25. Ground Terminal

26. Cooling Fan
It is recommended to replace it every 30,000 hours.

27. Remote Control Connector (RS-232C)
The RS-232C signal is supplied to this connector for remote controlling this unit by personal computer. The pin configuration is shown below.

Pin configuration
1. FG (Frame ground)
2. SD (TXD)
3. RD (RXD)
4. RS (RTS)
5. CS (CTS)
6. DR (DSR)
7. SG (Signal ground)
20. ER (DTR)
Other pins are not used.

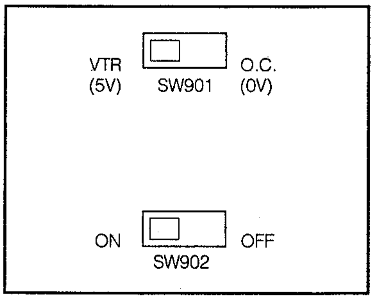
Note: See the command table on page 31 for signal information.

28. Time Adjustment Signal Input Terminal (TIME ADJ IN)
This terminal has 2 functions.
1) This terminal accepts the time adjustment signal (0VDC) from Time Lapse VTR. It enables to match the time between WJ-FS20 and Time Lapse VTR.
2) This terminal accepts the camera switching pulse (sequential) from external switcher.

29. Alarm Recover Input Terminal (RECOVER IN)
This terminal accepts the alarm recover signal (0VDC) from the Time Lapse VTR. The WJ-FS20 returns to the normal operation mode from alarm mode.

30. Alarm Recover Output Terminal (RECOVER OUT)
The alarm recover signal, either 0VDC or 5VDC, is output from this terminal to the Time Lapse VTR by pressing the Sequence/Alarm Reset Button (2).

- The selection can be made by SW901 located in the unit as shown.



SW901:
Switched to VTR position at factory.

SW902:
Switched to ON position at factory.

<Front>

31. Alarm Output Terminal (ALARM OUT)
When the Alarm Signal Input Terminal (32) is activated by the external sensor unit, the alarm signal is provided to other devices via this terminal.
Note: This terminal is composed of the Open-Collector Circuit. The supply voltage is 24V DC and the supply current is less than 100 mA.

32. Alarm Signal Input Terminals (ALARM IN)
These terminals accept the alarm signal (0VDC) from the sensor unit.

CIRCUIT DESCRIPTION

IC Description

1. IC740 on the Main Board is using the CMOS Gate Array Logic Memory Control IC YWM60065702F. The pin identifications of this IC are as follows:

Pin	Name	In/Out	Description
1	VDD	–	OUT+5V
2	TEST7	–	Connect to ground.
3	TEST6	–	Connect to OUT+5V through 22kΩ.
4	TEST5	–	Connect to ground through 22kΩ.
5	TEST4	–	Connect to OUT+5V through 22kΩ.
6	TEST3	–	Connect to ground through 22kΩ.
7	TEST2	–	Connect to OUT+5V through 22kΩ.
8	TEST1	–	Connect to ground through 22kΩ.
9	TEST0	–	Connect to OUT+5V through 22kΩ.
10	IDCLKO	Out	ID Clock output terminal; connect to pin 11.
11	IDCLK	In	ID Clock input terminal; connect to pin 10.
12	TSEL4	In	Not used.
13	TSEL3	In	Not used.
14	TSEL2	In	Not used.
15	TSEL1	In	Not used.
16	TSEL0	In	Not used.
17	TIN2	In	Not used.
18	TIN1	In	Not used.
19	CAMS	In	CAMS signal input terminal.
20	VDD	–	OUT+5V
21	VSS1	–	Ground
22	HPHS3	In	Not used.
23	HPHS2	In	Connect to ground through 150Ω.
24	HPHS1	In	Connect to ground through 150Ω.
25	HPHS0	In	Not used.
26	YHS2	In	Not used.
27	YHS1	In	Connect to ground through 150Ω.
28	YHS0	In	Not used.
29	CHR	In	Not used.
30	CHR3	In	Not used.
31	CHR2	In	Not used.
32	CHR1	In	Connect to ground.
33	CHR0	In	Not used.
34	HBCLEG	In	Not used.
35	CHRB1	In	Connect to ground.
36	CHRB0	In	Connect to ground.
37	BWS	In	Not used.
38	BOR1	In	BOR1 signal input terminal; connect with pin 39.
39	BOR0	In	BOR0 signal input terminal; connect with pin 38.
40	VDD	–	OUT+5V
41	VSS1	–	Ground
42	VSS2	–	Ground
43	SOCA	Out	RA SOC signal output terminal.
44	SOEA	Out	RA SOE signal output terminal.
45	SOCB	Out	RB SOC signal output terminal.
46	SOEB	Out	RB SOE signal output terminal.
47	D1	In	R(1) signal input terminal.
48	D2	In	R(2) signal input terminal.
49	D3	In	R(3) signal input terminal.
50	D4	In	R(4) signal input terminal.
51	D5	In	R(5) signal input terminal.
52	D6	In	R(6) signal input terminal.
53	D7	In	R(7) signal input terminal.
54	D8	In	R(8) signal input terminal.
55	D9	In	R(9) signal input terminal.
56	D10	In	R(10) signal input terminal.
57	D11	In	R(11) signal input terminal.
58	D12	In	R(12) signal input terminal.
59	D13	In	R(13) signal input terminal.
60	D14	In	R(14) signal input terminal.
61	D15	In	R(15) signal input terminal.
62	D16	In	R(16) signal input terminal.
63	D17	In	R(17) signal input terminal.
64	D18	In	R(18) signal input terminal.
65	SOCC	Out	RC SOC signal output terminal.
66	SOEC	Out	RC SOE signal output terminal.
67	SOCD	Out	RD SOC signal output terminal.
68	SOED	Out	RD SOE signal output terminal.
69	VSS1	–	Ground
70	RBCKS1	In	Not used.
71	RBCKS0	In	Not used.

Pin	Name	In/Out	Description
72	R4FV1	Out	Not used.
73	R4FV2	Out	FV4 signal output terminal.
74	R2FV1	Out	FV2 signal output terminal.
75	R2FV2	Out	Not used.
76	RFLD	Out	TP4/TP403
77	PASS	In	ABOUT signal input terminal.
78	MEMSEL	Out	Memory Select signal output terminal.
79	VSS1	–	Ground
80	VSS2	–	Ground
81	VDD	–	OUT+5V
82	CHRBT	In	Connect to ground.
83	CHRT	In	Connect to ground.
84	SCS	In	Not used.
85	ENC	In	Connect to ground through 150Ω.
86	RESET	In	Connect to OUT+5V
87	OVSCAN	In	Not used.
88	HPLLNT	In	Connect to OUT+5V through 150Ω.
89	HMOLVTR	In	Connect to ground.
90	HDSLRE	In	RP signal input terminal.
91	HNRLLP(LF)	In	LF signal input terminal.
92	MASK(DARK)	In	RMASK signal input terminal.
93	STB	In	STB signal input terminal.
94	SCLK	In	SCK input terminal.
95	SDATA	In	DATA input terminal.
96	CLR5M	In	Connect to OUT+5V.
97	CK5M	Out	Not used.
98	LSW	In	LSW signal input terminal.
99	CBLK	In	CBLK signal input terminal.
100	VDD	–	OUT+5V
101	VSS2	–	Ground
102	OSC1	In	Not used.
103	OSC2	Out	Not used.
104	VSS1	–	Ground
105	PHCO2	Out	PHCO2 output terminal.
106	PHCO1	Out	PHCO1 output terminal.
107	VSS1	–	Ground
108	CLKO	Out	Not used.
109	CLK	In	CLK input terminal.
110	R4FSC	In	4FSC signal input terminal.
111	PHCO	Out	PHC0 output signal; connect with pin 112.
112	PHCI2	In	PHCI2 input signal; connect with pin 111.
113	PHCI1	In	PHCI1 input signal; connect with pin 114.
114	RWHD	In	RWHD input terminal; connect with pin 113.
115	RVP	In	RVP input terminal.
116	BFP	In	BFP input terminal.
117	SC	In	SC 180° signal input terminal.
118	BST0	In	Connect to ground.
119	BST1	In	Connect to ground.
120	VDD	–	OUT+5V
121	VSS2	–	Ground
122	VSS1	–	Ground
123	BST2	In	Connect to ground.
124	BST3	In	Connect to ground.
125	BST4	In	Connect to ground.
126	BST5	In	Connect to ground.
127	BST6	In	Connect to ground.
128	BST7	In	Connect to OUT+5V.
129	VSS1	–	Connect to ground.
130	VDD	–	OUT+5V
131	Y0	Out	Y0 output signal.
132	Y1	Out	Y1 output signal.
133	Y2	Out	Y2 output signal.
134	Y3	Out	Y3 output signal.
135	Y4	Out	Y4 output signal.
136	Y5	Out	Y5 output signal.
137	Y6	Out	Y6 output signal.
138	Y7	Out	Y7 output signal.
139	VSS1	–	Ground
140	VDD	–	OUT+5V
141	RY0	Out	(R-Y)0 output signal.
142	RY1	Out	(R-Y)1 output signal.
143	RY2	Out	(R-Y)2 output signal.
144	RY3	Out	(R-Y)3 output signal.
145	RY4	Out	(R-Y)4 output signal.
146	RY5	Out	(R-Y)5 output signal.
147	RY6	Out	(R-Y)6 output signal.
148	RY7	Out	(R-Y)7 output signal.
149	VSS1	–	Ground
150	VDD	–	OUT+5V
151	BY0	Out	(B-Y)0 output signal.
152	BY1	Out	(B-Y)1 output signal.
153	BY2	Out	(B-Y)2 output signal.
154	BY3	Out	(B-Y)3 output signal.
155	BY4	Out	(B-Y)4 output signal.
156	BY5	Out	(B-Y)5 output signal.
157	BY6	Out	(B-Y)6 output signal.
158	BY7	Out	(B-Y)7 output signal.
159	VSS1	–	Ground
160	VSS2	–	Ground

2. IC710 on the Main Board is using the Write Control Gate Array Logic IC YWL7A1121.
The pin identifications of this IC are as follows:

Pin	Name	In/Out	Description
1	VDD	–	D+5V
2	DL5	Out	RADL(5) signal output terminal.
3	DL4	Out	RADL(4) signal output terminal.
4	DL3	Out	RADL(3)signal output terminal.
5	DL2	Out	RADL(2) signal output terminal.
6	DL1	Out	RADL(1) signal output terminal.
7	DL0	Out	RADL(0) signal output terminal.
8	VSS	–	Ground
9	RASIREL	Out	$\overline{\text{RAS}}/\overline{\text{IRE}}$ signal output terminal.
10	IRSCASL	Out	$\overline{\text{IRS}}$/CAS signal output terminal.
11	VDD	–	D+5V
12	IRL7	Out	RAIRL(7) signal output terminal.
13	IRL6	Out	RAIRL(6) signal output terminal.
14	IRL5	Out	RAIRL(5)signal output terminal.
15	IRL4	Out	RAIRL(4) signal output terminal.
16	IRL3	Out	RAIRL(3) signal output terminal.
17	IRL2	Out	RAIRL(2) signal output terminal.
18	IRL1	Out	RAIRL(1) signal output terminal.
19	IRL0	Out	RAIRL(0) signal output terminal.
20	VSS	–	Ground
21	VSS	–	Ground
22	TEST0	In	Connect to ground.
23	TEST1	In	Connect to ground.
24	TEST2	In	Connect to ground.
25	TEST3	In	Connect to ground.
26	TEST4	In	Connect to ground.
27	FCLEARL	In	FCLEARL signal input terminal.
28	OMIN	In	Connect to ground.
29	OMOUT	Out	OMOUT signal output terminal.
30	OENB	–	Not used.
31	IDSYNC	In	IDSYNC signal input terminal.
32	SEPA ID	In	ID signal input terminal.
33	NP	In	Connect to ground through R728; PAL mode.
34	OVSCAN	–	Connect to D+5V.
35	SCASC	–	Not used.
36	UL	–	Connect to ground.
37	VM	–	Connect to ground.
38	PHCOSL	–	No Connection.
39	PHCODL	–	No Connection.
40	VDD3	–	D+5V
41	VDD	–	D+5V
42	PLLCKL	–	Connect to ground.
43	WRTHDL	–	Not used.
44	YSL	Out	RAYS signal output terminal.
45	CSL	Out	RACS signal output terminal.
46	WVDL	In	WVDV1 signal input terminal; connect with pin 67.
47	TESTOUT	–	Not used.
48	LWC14M	Out	LWC14M signal output terminal; connect with pin 69.
49	VSS	–	Ground
50	LWCSYNC	In	LWCSYNC signal input terminal; connect with pin 71.
51	PA7	In	RA(7) signal input terminal.
52	PA6	In	RA(6) signal input terminal.
53	PA5	In	RA(5) signal input terminal.
54	PA4	In	RA(4) signal input terminal.
55	PA3	In	RA(3) signal input terminal.
56	PA2	In	RA(2) signal input terminal.
57	PA1	In	RA(1) signal input terminal.
58	PA0	In	RA(0) signal input terminal.
59	VSS2	–	Ground
60	VSS	–	Ground
61	VDD	–	D+5V
62	TEST6	–	Connect to ground.
63	RDCLK	In	RDCLK signal input terminal.
64	VSS	–	Ground
65	YSR	Out	RBYS signal output terminal.
66	CSR	Out	RBCS signal output terminal.

Pin	Name	In/Out	Description
67	WVDR	In	WVDV1 signal input terminal; connect with pin 46.
68	TEST7	–	Connect to ground.
69	RWC14M	Out	RWC14M signal output terminal; connect with pin 48.
70	VSS	–	Ground
71	RWCSYNC	In	RWCSYNC signal input terminal; connect with pin 50.
72	PB7	In	RB(7) signal input terminal.
73	PB6	In	RB(6) signal input terminal.
74	PB5	In	RB(5) signal input terminal.
75	PB4	In	RB(4) signal input terminal.
76	PB3	In	RB(3) signal input terminal.
77	PB2	In	RB(2) signal input terminal.
78	PB1	In	RB(1) signal input terminal.
79	PB0	In	RB(0) signal input terminal.
80	VDD	–	D+5V
81	VDD3	–	D+5V
82	PHCODR	–	Not used.
83	PHCOSR	–	Not used.
84	PLLCKR	–	Connect to ground.
85	WRTHDR	–	Not used.
86	LOC RST	–	Connect to ground.
87	CHANGE	–	Connect to ground.
88	RP	In	RP signal input terminal.
89	LF	In	LF signal input terminal.
90	FCLEARR	In	FCLEARR signal input terminal.
91	STB	In	STB signal input terminal.
92	SCK	In	SCK signal input terminal.
93	DATA	In	DATA signal input terminal.
94	CD	In	CD signal input terminal.
95	VID	Out	VID signal output terminal.
96	RCSYNC	In	RSYNC signal input terminal.
97	MEMSEL	In	MEMSEL signal input terminal.
98	ABOUT	Out	ABOUT signal output terminal.
99	RFLD	–	Not used.
100	VSS	–	Ground
101	VSS2	–	Ground
102	FV2	In	FV4 signal input terminal.
103	FV4	In	FV4 signal input terminal.
104	IRR0	Out	RBIRR(0) signal output terminal.
105	IRR1	Out	RBIRR(1) signal output terminal.
106	IRR2	Out	RBIRR(2) signal output terminal.
107	IRR3	Out	RBIRR(3) signal output terminal.
108	IRR4	Out	RBIRR(4) signal output terminal.
109	IRR5	Out	RBIRR(5) signal output terminal.
110	IRR6	Out	RBIRR(6) signal output terminal.
111	IRR7	Out	RBIRR(7) signal output terminal.
112	VDD	–	D+5V
113	IRSCASR	Out	$\overline{\text{RAS}}$/$\overline{\text{IRE}}$ signal output terminal.
114	IRSCASR	Out	$\overline{\text{IRS}}$/CAS signal output terminal
115	VSS	–	Ground
116	DR17	Out	RBDR(17) signal output terminal.
117	DR16	Out	RBDR(16) signal output terminal.
118	DR15	Out	RBDR(15) signal output terminal.
119	DR14	Out	RBDR(14) signal output terminal.
120	VDD3	–	D+5V
121	VDD	–	D+5V
122	DR13	Out	RBDR(13) signal output terminal.
123	DR12	Out	RBDR(12) signal output terminal.
124	DR11	Out	RBDR(11) signal output terminal.
125	DR10	Out	RBDR(10) signal output terminal.
126	DR9	Out	RBDR(9) signal output terminal.
127	DR8	Out	RBDR(8) signal output terminal.
128	VSS	–	Ground
129	DR7	Out	RBDR(7) signal output terminal.
130	DR6	Out	RBDR(6) signal output terminal.
131	VDD	–	D+5V
132	DR5	Out	RBDR(5) signal output terminal.
133	DR4	Out	RBDR(4) signal output terminal.
134	DR3	Out	RBDR(3) signal output terminal.

Pin	Name	In/Out	Description
135	DR2	Out	RBDR(2) signal output terminal.
136	DR1	Out	RBDR(1) signal output terminal.
137	DR0	Out	RBDR(0) signal output terminal.
138	SIE R	Out	SIE R signal output terminal.
139	SCI R	Out	SCI R signal output terminal.
140	VDD	–	D+5V
141	VSS	–	Ground
142	VSS3	–	Ground
143	VSS2	–	Ground
144	SCI L	Out	SCI R signal output terminal.
145	SIE L	Out	SIE R signal output terminal.
146	DR17	Out	RADL(17) signal output terminal.
147	DR16	Out	RADR(16) signal output terminal.
148	DR15	Out	RADR(15) signal output terminal.
149	DR14	Out	RADR(14) signal output terminal.
150	DR13	Out	RADR(13) signal output terminal.
151	DR12	Out	RADR(12) signal output terminal.
152	VDD	–	D+5V
153	DR11	Out	RADR(11) signal output terminal.
154	DR10	Out	RADR(10) signal output terminal.
155	VSS	–	Ground
156	DR9	Out	RADR(9) signal output terminal.
157	DR8	Out	RADR(8) signal output terminal.
158	DR7	Out	RADR(7) signal output terminal.
159	DR6	Out	RADR(6) signal output terminal.
160	VDD3	–	D+5V

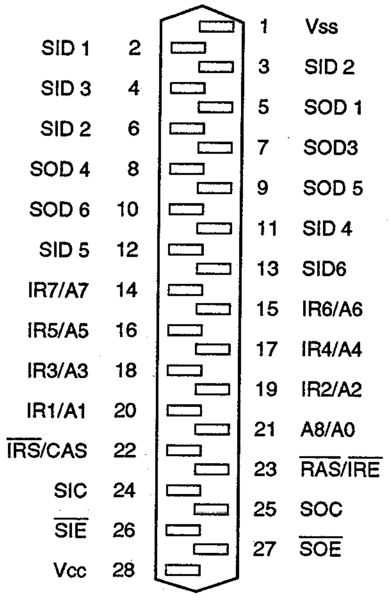
3. IC720 on the Main Board is using the Write Control Gate Array Logic IC YWL7A1121.
The pin identifications of this IC are as follows:

Pin	Name	In/Out	Description
1	VDD	–	D+5V
2	DL5	Out	RCDL(5) signal output terminal.
3	DL4	Out	RCDL(4) signal output terminal.
4	DL3	Out	RCDL(3)signal output terminal.
5	DL2	Out	RCDL(2) signal output terminal.
6	DL1	Out	RCDL(1) signal output terminal.
7	DL0	Out	RCDL(0) signal output terminal.
8	VSS	–	Ground
9	RASIREL	Out	$\overline{\text{RAS}}$/$\overline{\text{IRE}}$ signal output terminal.
10	IRSCASL	Out	$\overline{\text{IRS}}$/CAS signal output terminal.
11	VDD	–	D+5V
12	IRL7	Out	RCIRL(7) signal output terminal.
13	IRL6	Out	RCIRL(6) signal output terminal.
14	IRL5	Out	RCIRL(5)signal output terminal.
15	IRL4	Out	RCIRL(4) signal output terminal.
16	IRL3	Out	RCIRL(3) signal output terminal.
17	IRL2	Out	RCIRL(2) signal output terminal.
18	IRL1	Out	RCIRL(1) signal output terminal.
19	IRL0	Out	RCIRL(0) signal output terminal.
20	VSS	–	Ground
21	VSS	–	Ground
22	TEST0	In	Connect to ground.
23	TEST1	In	Connect to ground.
24	TEST2	In	Connect to ground.
25	TEST3	In	Connect to ground.
26	TEST4	In	Connect to ground.
27	FCLEARL	In	FCLEARL signal input terminal.
28	OMIN	In	Connect to ground.
29	OMOUT	Out	Not used.
30	OENB	–	Not used.

Pin	Name	In/Out	Description
31	IDSYNC	In	IDSYNC signal input terminal.
32	SEPA ID	In	ID signal input terminal.
33	NP	In	Non connection; PAL mode.
34	OVSCAN	–	Connect to D+5V.
35	SCASC	–	Not used.
36	UL	–	Connect to ground.
37	VM	–	Connect to ground.
38	PHCOSL	–	No Connection.
39	PHCODL	–	No Connection.
40	VDD3	–	D+5V
41	VDD	–	D+5V
42	PLLCKL	–	Connect to ground.
43	WRTHDL	–	Not used.
44	YSL	Out	Not used.
45	CSL	Out	Not used.
46	WVDL	In	WVDV1 signal input terminal; connect with pin 67.
47	TESTOUT	–	Not used.
48	LWC14M	Out	LWC14M signal output terminal; connect with pin 69.
49	VSS	–	Ground
50	LWCSYNC	In	LWCSYNC signal input terminal; connect with pin 71.
51	PA7	In	RC(7) signal input terminal.
52	PA6	In	RC(6) signal input terminal.
53	PA5	In	RC(5) signal input terminal.
54	PA4	In	RC(4) signal input terminal.
55	PA3	In	RC(3) signal input terminal.
56	PA2	In	RC(2) signal input terminal.
57	PA1	In	RC(1) signal input terminal.
58	PA0	In	RC(0) signal input terminal.
59	VSS2	–	Ground
60	VSS	–	Ground
61	VDD	–	D+5V
62	TEST6	–	Connect to ground.
63	RDCLK	In	RDCLK signal input terminal.
64	VSS	–	Ground
65	YSR	Out	RDYS signal output terminal.
66	CSR	Out	RDCS signal output terminal.
67	WVDR	In	WVDV1 signal input terminal; connect with pin 46.
68	TEST7	–	Connect to ground.
69	RWC14M	Out	RWC14M signal output terminal; connect with pin 48.
70	VSS	–	Ground
71	RWCSYNC	In	RWCSYNC signal input terminal; connect with pin 50.
72	PB7	In	RD(7) signal input terminal.
73	PB6	In	RD(6) signal input terminal.
74	PB5	In	RD(5) signal input terminal.
75	PB4	In	RD(4) signal input terminal.
76	PB3	In	RD(3) signal input terminal.
77	PB2	In	RD(2) signal input terminal.
78	PB1	In	RD(1) signal input terminal.
79	PB0	In	RD(0) signal input terminal.
80	VDD	–	D+5V
81	VDD3	–	D+5V
82	PHCODR	–	Not used.
83	PHCOSR	–	Not used.
84	PLLCKR	–	Connect to ground.
85	WRTHDR	–	Not used.
86	LOC RST	–	Connect to ground.
87	CHANGE	–	Connect to ground.
88	RP	In	RP signal input terminal.
89	LF	In	LF signal input terminal.
90	FCLEARR	In	FCLEARR signal input terminal.
91	STB	In	STB signal input terminal.
92	SCK	In	SCK signal input terminal.
93	DATA	In	DATA signal input terminal.
94	CD	In	CD signal input terminal.
95	VID	Out	VID signal output terminal.
96	RCSYNC	In	RSYNC signal input terminal.
97	MEMSEL	In	MEMSEL signal input terminal.
98	ABOUT	Out	Not used.
99	RFLD	–	Not used.
100	VSS	–	Ground
101	VSS2	–	Ground
102	FV2	In	FV4 signal input terminal.
103	FV4	In	FV4 signal input terminal.
104	IRR0	Out	RDIRR(0) signal output terminal.
105	IRR1	Out	RDIRR(1) signal output terminal.
106	IRR2	Out	RDIRR(2) signal output terminal.
107	IRR3	Out	RDIRR(3) signal output terminal.

Pin	Name	In/Out	Description
108	IRR4	Out	RDIRR(4) signal output terminal.
109	IRR5	Out	RDIRR(5) signal output terminal.
110	IRR6	Out	RDIRR(6) signal output terminal.
111	IRR7	Out	RDIRR(7) signal output terminal.
112	VDD	–	D+5V
113	IRSCASR	Out	$\overline{\text{RAS}}$/$\overline{\text{IRE}}$ signal output terminal
114	IRSCASR	Out	$\overline{\text{IRS}}$/CAS signal output terminal
115	VSS	–	Ground
116	DR17	Out	RDDR(17) signal output terminal.
117	DR16	Out	RDDR(16) signal output terminal.
118	DR15	Out	RDDR(15) signal output terminal.
119	DR14	Out	RDDR(14) signal output terminal.
120	VDD3	–	D+5V
121	VDD	–	D+5V
122	DR13	Out	RDDR(13) signal output terminal.
123	DR12	Out	RDDR(12) signal output terminal.
124	DR11	Out	RDDR(11) signal output terminal.
125	DR10	Out	RDDR(10) signal output terminal.
126	DR9	Out	RDDR(9) signal output terminal.
127	DR8	Out	RDDR(8) signal output terminal.
128	VSS	–	Ground
129	DR7	Out	RDDR(7) signal output terminal.
130	DR6	Out	RDDR(6) signal output terminal.
131	VDD	–	D+5V
132	DR5	Out	RDDR(5) signal output terminal.
133	DR4	Out	RDDR(4) signal output terminal.
134	DR3	Out	RDDR(3) signal output terminal.
135	DR2	Out	RDDR(2) signal output terminal.
136	DR1	Out	RDDR(1) signal output terminal.
137	DR0	Out	RDDR(0) signal output terminal.
138	SIE R	Out	SIE R signal output terminal.
139	SCI R	Out	SCI R signal output terminal.
140	VDD	–	D+5V
141	VSS	–	Ground
142	VSS3	–	Ground
143	VSS2	–	Ground
144	SCI L	Out	SCI R signal output terminal.
145	SIE L	Out	SIE R signal output terminal.
146	DR17	Out	RCDL(17) signal output terminal.
147	DR16	Out	RCDR(16) signal output terminal.
148	DR15	Out	RCDR(15) signal output terminal.
149	DR14	Out	RCDR(14) signal output terminal.
150	DR13	Out	RCDR(13) signal output terminal.
151	DR12	Out	RCDR(12) signal output terminal.
152	VDD	–	D+5V
153	DR11	Out	RCDR(11) signal output terminal.
154	DR10	Out	RCDR(10) signal output terminal.
155	VSS	–	Ground
156	DR9	Out	RCDR(9) signal output terminal.
157	DR8	Out	RCDR(8) signal output terminal.
158	DR7	Out	RCDR(7) signal output terminal.
159	DR6	Out	RCDR(6) signal output terminal.
160	VDD3	–	D+5V

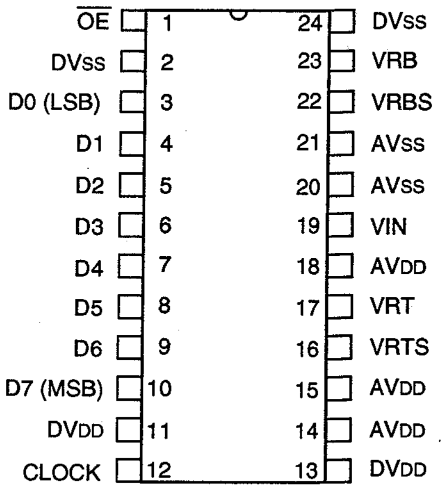
4. IC728 to IC739 on the Main Board are using the 80k-word x 6-bit Field Memory IC YWM5M4C500AL. Description of this IC is as follows:


1 Vss
SID 1 2
3 SID 2
SID 3 4
5 SOD 1
SID 2 6
7 SOD3
SOD 4 8
9 SOD 5
SOD 6 10
11 SID 4
SID 5 12
13 SID6
IR7/A7 14
15 IR6/A6
IR5/A5 16
17 IR4/A4
IR3/A3 18
19 IR2/A2
IR1/A1 20
21 A8/A0
$\overline{\text{IRS}}$/CAS 22
23 $\overline{\text{RAS}}$/$\overline{\text{IRE}}$
SIC 24
25 SOC
$\overline{\text{SIE}}$ 26
27 $\overline{\text{SOE}}$
Vcc 28

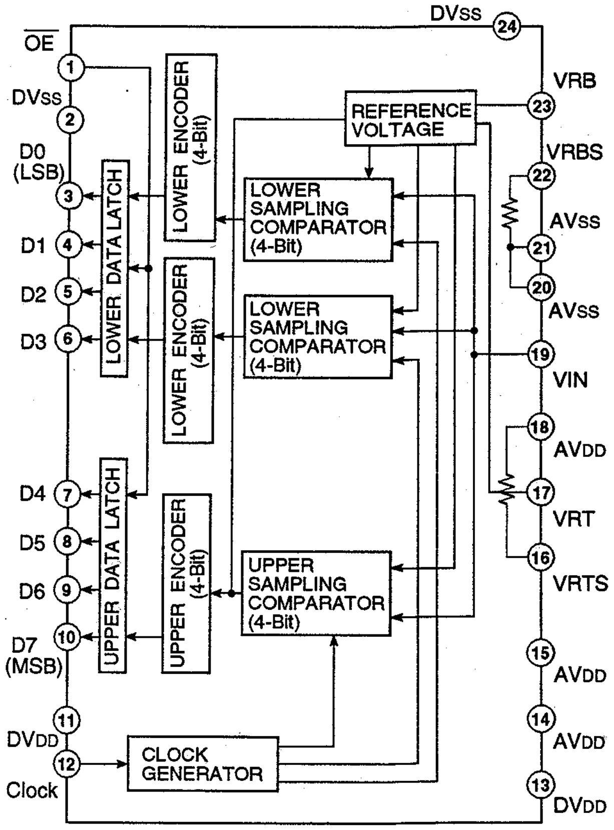
(BOTTOM VIEW)

Pin	Name	In/Out	Description
1	VSS	–	Ground
2	SID1	In	6-bit Serial Data input terminals
3	SID2		
4	SID3		
5	SOD1	Out	6-bit Serial Data output terminals
6	SOD2		
7	SOD3		
8	SOD4		
9	SOD5		
10	SOD6		
11	SID4	In	6-bit Serial Data input terminals
12	SID5		
13	SID6		
14	IR7/A7	In	Instruction Code, Column Address and Row Address input terminals
15	IR6/A6		
16	IR5/A5		
17	IR4/A4		
18	IR3/A3		
19	IR2/A2		
20	IR1/A1		
21	A8/A0		
22	$\overline{\text{IRS}}$/ CAS	In	Instruction Strobe signal and Row Address Strobe signal input terminal
23	$\overline{\text{RAS}}$/ $\overline{\text{IRE}}$	In	Column Address Strobe signal and Instruction enable signal input terminal
24	SIC	In	6-bit Serial Data In Clock input terminal
25	SOC	In	Serial Data Out Clock input terminal
26	$\overline{\text{SIE}}$	In	Serial Data input enable terminal
27	$\overline{\text{SOE}}$	In	Serial Data output enable terminal
28	VCC	In	D+5V

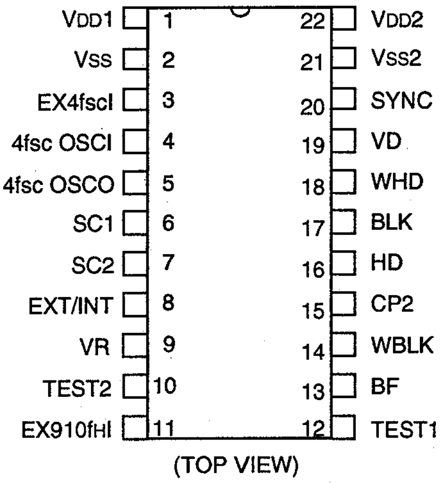
5. IC703, IC708, IC717, and IC723 are using the 8-bit A/D Converter IC YWCXD1175 AM. Description of this IC is as follows:

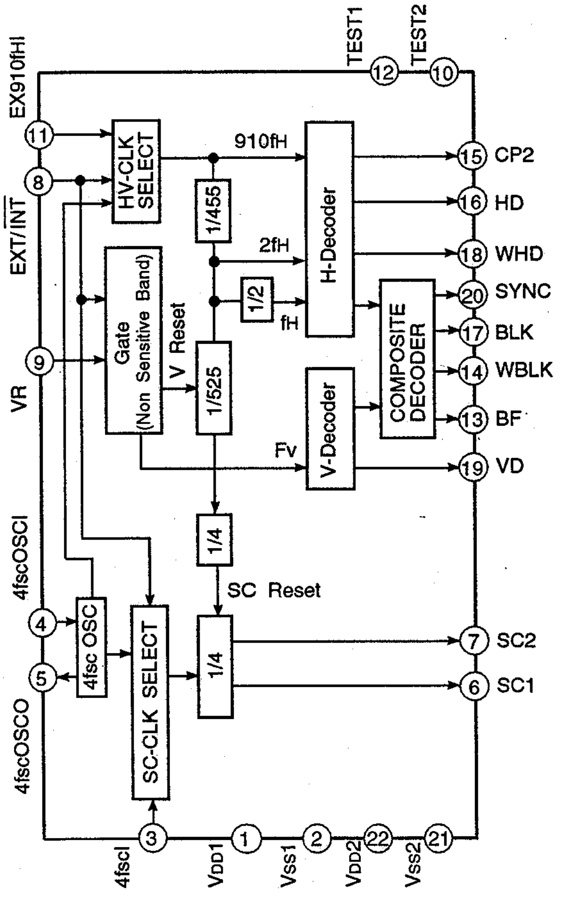

$\overline{\text{OE}}$ 1
DVss 2
D0 (LSB) 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 (MSB) 10
DVDD 11
CLOCK 12
24 DVss
23 VRB
22 VRBS
21 AVss
20 AVss
19 VIN
18 AVDD
17 VRT
16 VRTS
15 AVDD
14 AVDD
13 DVDD

(TOP VIEW)

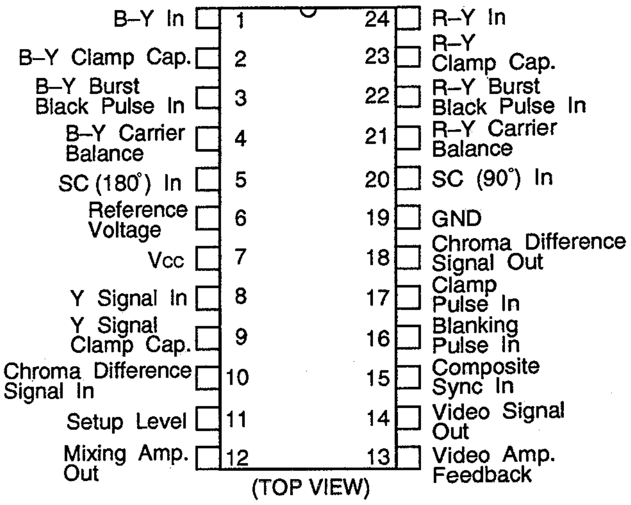

$\overline{\text{OE}}$
DVss
D0 (LSB)
D1
D2
D3
D4
D5
D6
D7 (MSB)
DVDD
Clock
LOWER DATA LATCH
UPPER DATA LATCH
LOWER ENCODER (4-Bit)
LOWER ENCODER (4-Bit)
UPPER ENCODER (4-Bit)
REFERENCE VOLTAGE
LOWER SAMPLING COMPARATOR (4-Bit)
LOWER SAMPLING COMPARATOR (4-Bit)
UPPER SAMPLING COMPARATOR (4-Bit)
CLOCK GENERATOR
DVss
VRB
VRBS
AVss
AVss
VIN
AVDD
VRT
VRTS
AVDD
AVDD
DVDD
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

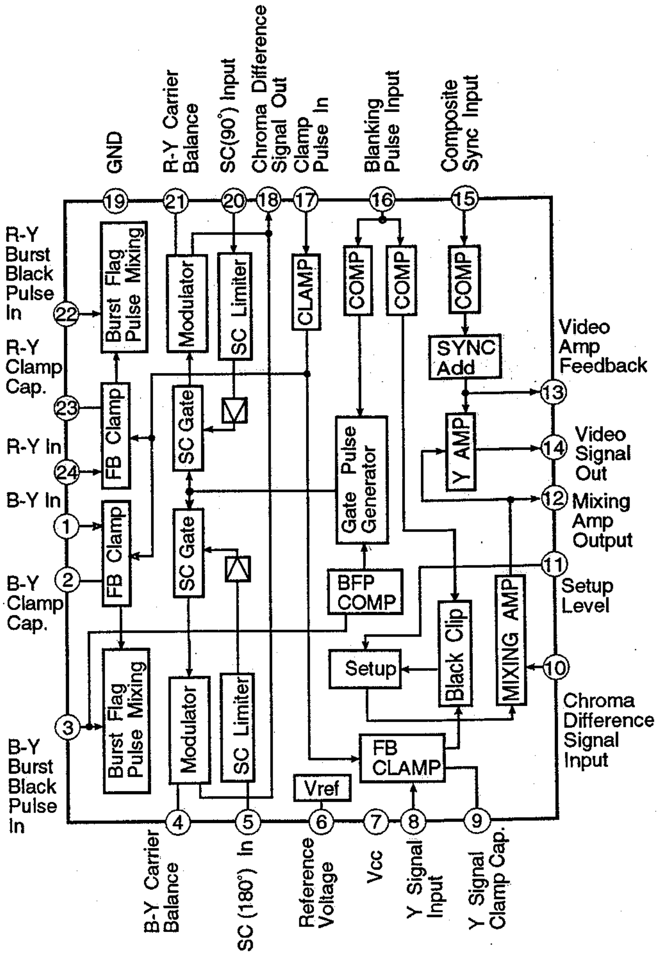
6. IC754, IC760, and IC762 on the Main Board are using the IC MN67603NS.
Description of this IC is as follows:


VDD1 1
Vss 2
EX4fscl 3
4fsc OSCI 4
4fsc OSCO 5
SC1 6
SC2 7
EXT/INT 8
VR 9
TEST2 10
EX910fHI 11
22 VDD2
21 Vss2
20 SYNC
19 VD
18 WHD
17 BLK
16 HD
15 CP2
14 WBLK
13 BF
12 TEST1
(TOP VIEW)


EX910fHI
TEST1
TEST2
12
10
11
8
EXT/INT
9
VR
4fscOSCI
4
5
4fscOSCO
HV-CLK SELECT
910fH
1/455
2fH
Gate (Non Sensitive Band)
V Reset
1/2
fH
1/525
H-Decoder
COMPOSITE DECODER
V-Decoder
Fv
1/4
SC Reset
1/4
4fsc OSC
SC-CLK SELECT
15 CP2
16 HD
18 WHD
20 SYNC
17 BLK
14 WBLK
13 BF
19 VD
7 SC2
6 SC1
3
1
2
22
21
4fscl
VDD1
Vss1
VDD2
Vss2

7. IC742 on the Main Board is using the Chroma Difference Encoder IC YWM51272FP.
Description of this IC is as follows.


B–Y In 1
B–Y Clamp Cap. 2
B–Y Burst Black Pulse In 3
B–Y Carrier Balance 4
SC (180°) In 5
Reference Voltage 6
Vcc 7
Y Signal In 8
Y Signal Clamp Cap. 9
Chroma Difference Signal In 10
Setup Level 11
Mixing Amp. Out 12
24 R–Y In
23 R–Y Clamp Cap.
22 R–Y Burst Black Pulse In
21 R–Y Carrier Balance
20 SC (90°) In
19 GND
18 Chroma Difference Signal Out
17 Clamp Pulse In
16 Blanking Pulse In
15 Composite Sync In
14 Video Signal Out
13 Video Amp. Feedback
(TOP VIEW)

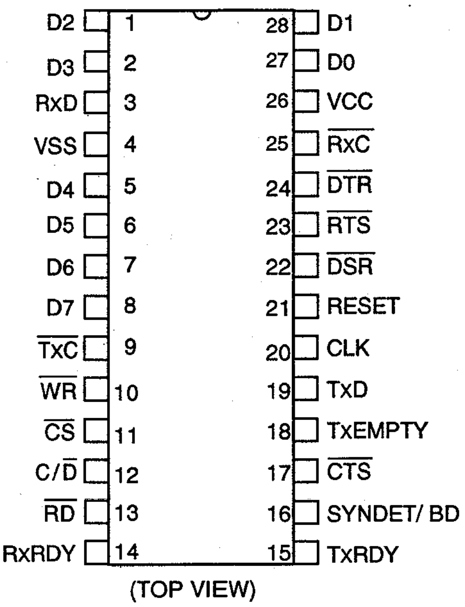

GND
R-Y Carrier Balance
SC(90°) Input
Chroma Difference Signal Out
Clamp Pulse In
Blanking Pulse Input
Composite Sync Input
19
21
20
18
17
16
15
R-Y Burst Black Pulse In
22
R-Y Clamp Cap.
23
R-Y In
24
B-Y In
1
B-Y Clamp Cap.
2
B-Y Burst Black Pulse In
3
Burst Flag Pulse Mixing
Modulator
SC Limiter
CLAMP
COMP
COMP
COMP
SYNC Add
FB Clamp
SC Gate
Gate Pulse Generator
Y AMP
FB Clamp
SC Gate
BFP COMP
Black Clip
MIXING AMP
Setup
Burst Flag Pulse Mixing
Modulator
SC Limiter
Vref
FB CLAMP
Video Amp Feedback
13
Video Signal Out
14
12
Mixing Amp Output
11
Setup Level
10
Chroma Difference Signal Input
4
5
6
7
8
9
B-Y Carrier Balance
SC (180°) In
Reference Voltage
Vcc
Y Signal Input
Y Signal Clamp Cap.

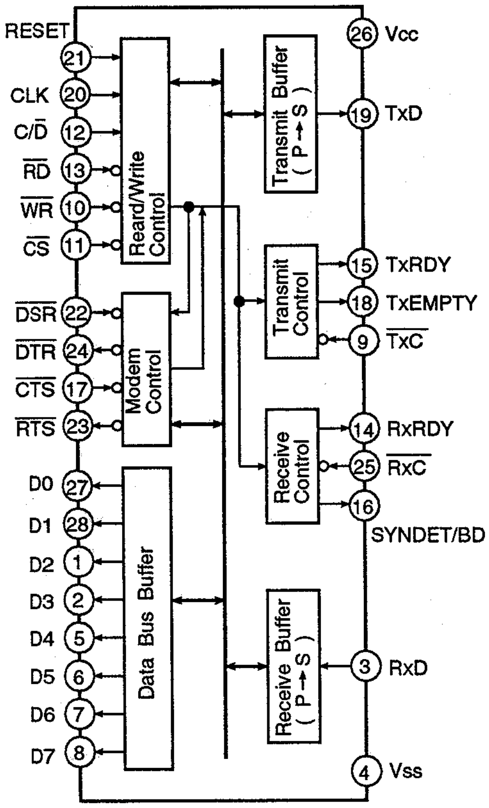
8. IC901 on the Main Board is using the Microprocessor IC M38003M6SPA.
The pin identifications of this IC are as follows:

Pin	Name	I n/Out	Description
1	Vcc	–	+5V
2	P71	–	Not used.
3	$\overline{\text{CAMS}}$	In	$\overline{\text{CAMS}}$ signal input terminal.
4	STB	Out	STB signal output terminal.
5	SCK	In	SCK signal output terminal.
6	DATA	Out	DATA output terminal.
7	SRAM CO	Out	SRAM CO signal output terminal.
8	P63	In	Voltage Detector input terminal.
9	PHONE	In	PHONE signal input terminal.
10	CHDET	In	CHDET signal input terminal.
11	WATCH	Out	WATCH signal output terminal.
12	DSTB	Out	DSTB signal output terminal.
13	DSCLK	Out	DSCLK signal output terminal.
14	DSIN	Out	DSIN signal output terminal.
15	BZ OUT	Out	BZ OUT signal output terminal.
16	RXRDY	In	RXRDY signal input terminal.
17	TXRDY	In	TXRDY signal input terminal.
18	P51	In	RWVD signal input terminal; connect with pin 25.
19	TIME ADJ	In	TIME ADJ signal input terminal.
20	RSTB	Out	RSTB signal output terminal.
21	RSCLK	Out	RSCLK signal output terminal.
22	RSIN	Out	RSIN signal output terminal.
23	SQMSK	Out	SQMSK signal output terminal.
24	CAM VD	Out	CAM VD signal output terminal.
25	RWVD	Out	RWVD signal output terminal; connect with pin 18.

Pin	Name	I n/Out	Description
26	CNVSS	–	Ground
27	$\overline{\text{RESET}}$	In	$\overline{\text{RESET}}$ signal input terminal.
28	VID	In	VID signal input terminal.
29	MEMSEL	In	MEMSEL signal input terminal.
30	XIN	In	Clock Generator input terminal.
31	XOUT	Out	Clock Generator signal output terminal.
32	VSS	–	Ground
33	DB7	In/Out	DB7 input/output terminal.
34	DB6	In/Out	DB6 input/output terminal.
35	DB5	In/Out	DB5 input/output terminal.
36	DB4	In/Out	DB4 input/output terminal.
37	DB3	In/Out	DB3 input/output terminal.
38	DB2	In/Out	DB2 input/output terminal.
39	DB1	In/Out	DB1 input/output terminal.
40	DB0	In/Out	DB0 input/output terminal.
41	A15	Out	A15 signal output terminal.
42	A14	Out	A14 signal output terminal.
43	A13	Out	A13 signal output terminal.
44	A12	Out	A12 signal output terminal.
45	A11	Out	A11 signal output terminal.
46	A10	Out	A10 signal output terminal.
47	A9	Out	A9 signal output terminal.
48	A8	Out	A8 signal output terminal.
49	A7	Out	A7 signal output terminal.
50	A6	Out	A6 signal output terminal.
51	A5	Out	A5 signal output terminal.
52	A4	Out	A4signal output terminal.
53	A3	Out	A3signal output terminal.
54	A2	Out	A2 signal output terminal.
55	A1	Out	A1 signal output terminal.
56	A0	Out	A0 signal output terminal.
57	RD	Out	RD signal output terminal.
58	WR	Out	WR signal output terminal.
59	P59	–	Not used.
60	RSCLK	Out	2.4576MHz output terminal.
61	P33	–	Not used.
62	P32	–	Not used.
63	RECOVER	Out	RECOVER signal output terminal.
64	ALARM OUT	Out	ALARM OUT signal output terminal.

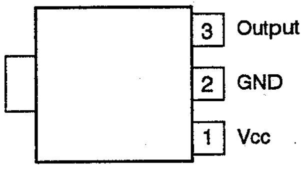
9. IC911 on the Main Board is using the Programmable Communication Interface IC YWM5M82C51AFP. Description of this IC is as follows:

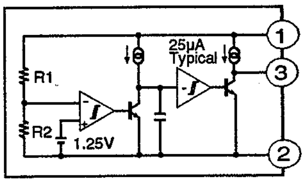

D2 1
D3 2
RxD 3
VSS 4
D4 5
D5 6
D6 7
D7 8
$\overline{TxC}$ 9
$\overline{WR}$ 10
$\overline{CS}$ 11
C/$\overline{D}$ 12
$\overline{RD}$ 13
RxRDY 14
28 D1
27 D0
26 VCC
25 $\overline{RxC}$
24 $\overline{DTR}$
23 $\overline{RTS}$
22 $\overline{DSR}$
21 RESET
20 CLK
19 TxD
18 TxEMPTY
17 $\overline{CTS}$
16 SYNDET/ BD
15 TxRDY
(TOP VIEW)

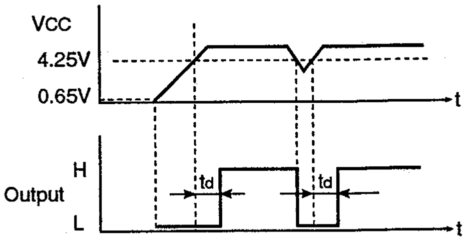

RESET 21
CLK 20
C/$\overline{D}$ 12
$\overline{RD}$ 13
$\overline{WR}$ 10
$\overline{CS}$ 11
$\overline{DSR}$ 22
$\overline{DTR}$ 24
$\overline{CTS}$ 17
$\overline{RTS}$ 23
D0 27
D1 28
D2 1
D3 2
D4 5
D5 6
D6 7
D7 8
Reard/Write Control
Modem Control
Data Bus Buffer
Transmit Buffer (P→S)
Transmit Control
Receive Control
Receive Buffer (P→S)
26 Vcc
19 TxD
15 TxRDY
18 TxEMPTY
9 $\overline{TxC}$
14 RxRDY
25 $\overline{RxC}$
16 SYNDET/BD
3 RxD
4 Vss

Pin	Name	In/Out	Description
1	D2	In/Out	Bi-Directional Data Bus
2	D3		
3	RxD	In	Receive Data Input
4	VSS	–	Ground
5	D4	In/Out	Bi-Directional Data Bus
6	D5		
7	D6		
8	D7		
9	$\overline{TxC}$	In	Transmit Clock Input
10	$\overline{WR}$	In	Write Control Input
11	$\overline{CS}$	In	Chip Select Input
12	C/$\overline{D}$	In	Control/Data Control Input
13	$\overline{RD}$	In	Read Control Input
14	RXRDY	Out	Receiver Ready Output
15	TXRDY	Out	Transmitter Ready Output
16	SYNDET/BD	In/Out	Sync Detect/Break Detect
17	$\overline{CTS}$	In	Clear - to - Send Input
18	TXEMPTY	Out	Transmitter Empty Output
19	TXD	Out	Transmit Data Output
20	CLK	In	Clock Input
21	RESET	In	Reset Input
22	$\overline{DSR}$	In	Data Set Ready Input
23	$\overline{RTS}$	Out	Request - to - Send Output
24	$\overline{DTR}$	Out	Data Terminal Ready Output
25	$\overline{RXC}$	In	Receiver Clock Input
26	VCC	–	OUT+5VA
27	D0	In/Out	Bi-Directional Data Bus
28	D1		

10. IC903 and IC931 on the Main Board are using the Voltage Detector IC M51951AMLW. Description of this IC is as follows:

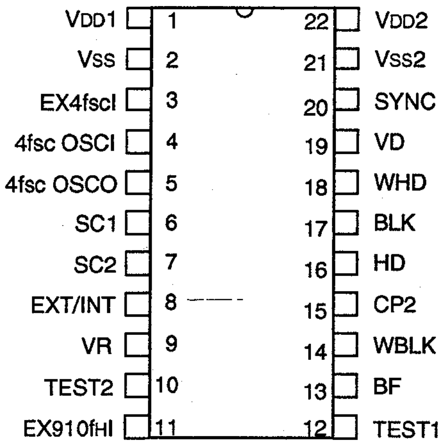

3 Output
2 GND
1 Vcc


R1
R2
1.25V
25µA Typical
1
3
2

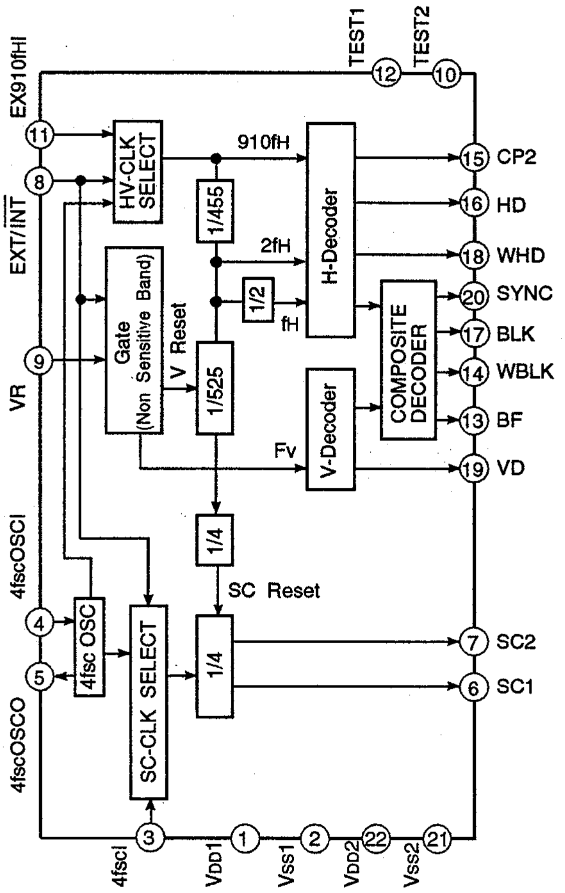


td ≈ 200µsec.

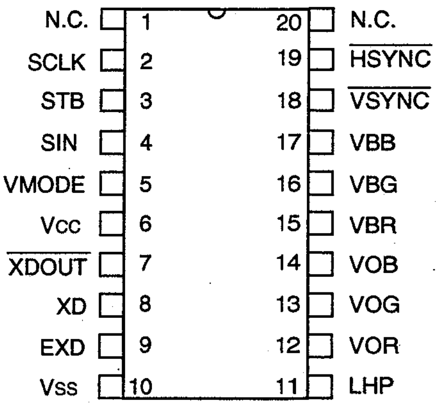
11. IC754, IC760, and IC762 on the Main Board are using the Sync Generator and PLL IC MN67603NS.
Description of this IC is as follows:


VDD1 1
Vss 2
EX4fscl 3
4fsc OSCI 4
4fsc OSCO 5
SC1 6
SC2 7
EXT/INT 8
VR 9
TEST2 10
EX910fHI 11
22 VDD2
21 Vss2
20 SYNC
19 VD
18 WHD
17 BLK
16 HD
15 CP2
14 WBLK
13 BF
12 TEST1

(TOP VIEW)


EX910fHI
EXT/INT
VR
4fscOSCI
4fscOSCO
TEST1
TEST2
HV-CLK SELECT
910fH
1/455
2fH
1/2
fH
H-Decoder
Gate (Non Sensitive Band)
V Reset
1/525
Fv
V-Decoder
COMPOSITE DECODER
CP2
HD
WHD
SYNC
BLK
WBLK
BF
VD
1/4
SC Reset
1/4
SC2
SC1
4fsc OSC
SC-CLK SELECT
4fscl
VDD1
Vss1
VDD2
Vss2

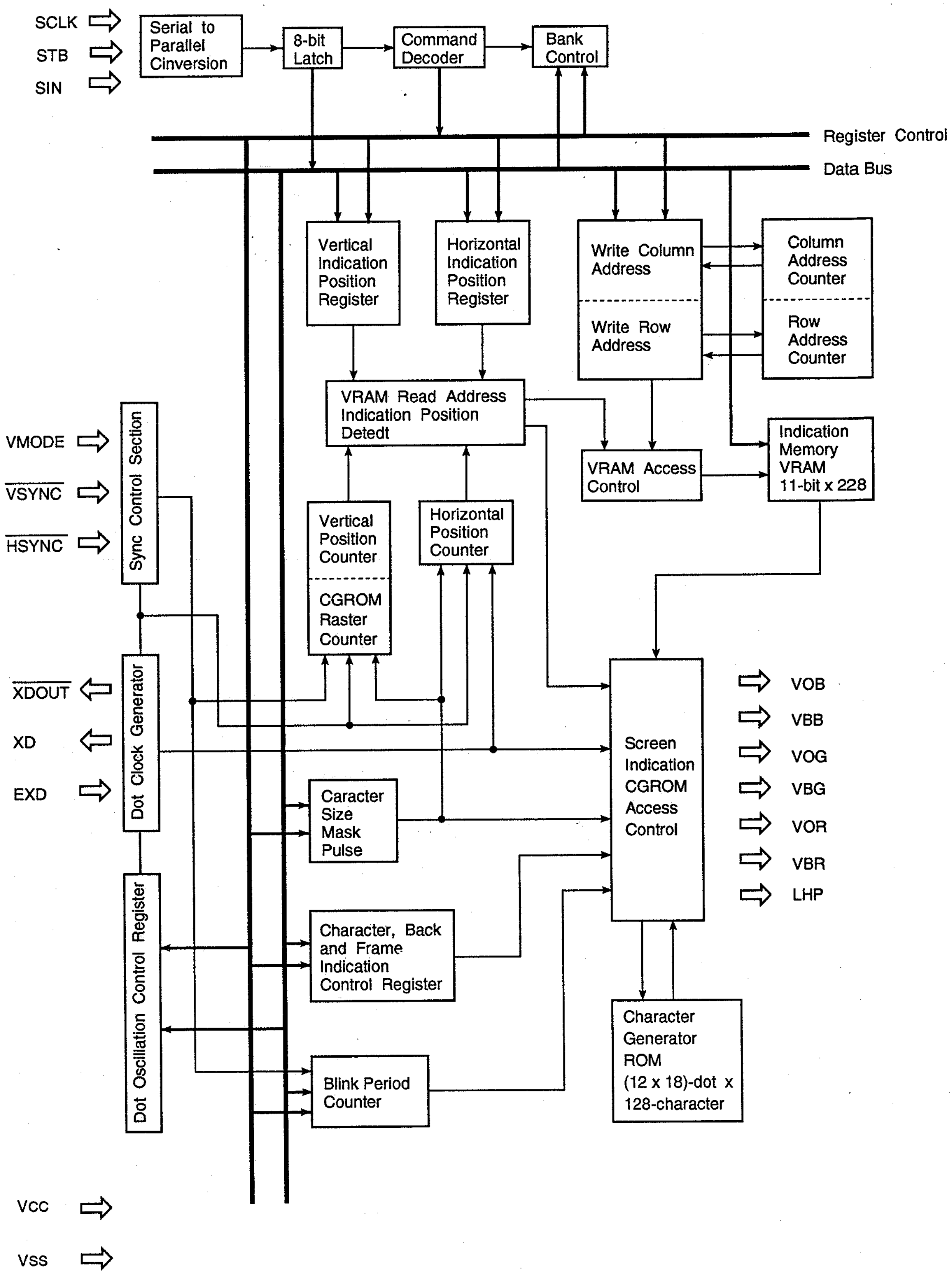
12. IC902 and IC912 on the Main Board are using the Character Generator IC MB90077PF104.
Description of this IC is as follows:


N.C. 1
SCLK 2
STB 3
SIN 4
VMODE 5
Vcc 6
XDOUT 7
XD 8
EXD 9
Vss 10
20 N.C.
19 HSYNC
18 VSYNC
17 VBB
16 VBG
15 VBR
14 VOB
13 VOG
12 VOR
11 LHP

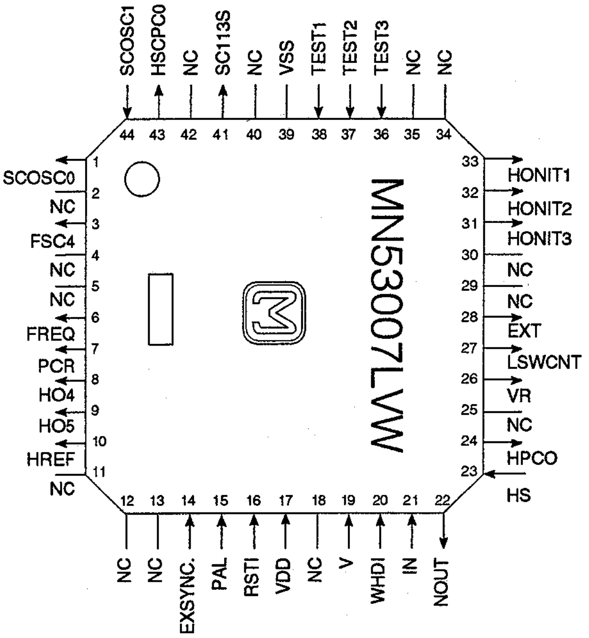
(TOP VIEW)

Pin No.	Name	In/Out	Description
1	N.C.	–	Non Connection
2	SCLK	In	Serial Clock input terminal.
3	STB	In	Strobe Signal input terminal Serial Data should be read at rising edge of this signal.
4	SIN	In	Serial Data Input terminal for indication control.
5	VMODE	In	Effective edge changing input terminal for Vertical Sync Signal. High : Rising edge Low : Falling edge
6	Vcc	–	+5V
7	$\overline{\text{XDOUT}}$	Out	Inverting output of XD signal.
8	XD	Out	External circuit terminals for Dot Clock Generator.
9	EXD	In	
10	Vss	–	Ground
11	LHP	Out	Line Hider Pulse output terminal.
12	VOR	Out	Color signal output terminals of RGB system.
13	VOG	Out	
14	VOB	Out	
15	VBR	Out	Blanking signal output terminals which indicating output of character signal against RGB system.
16	VBG	Out	
17	VBB	Out	
18	$\overline{\text{VSYNC}}$	In	Vertical Sync signal input terminal.
19	$\overline{\text{HSYNC}}$	In	Horizontal Sync signal input terminal.
20	N.C.	–	Non Connection

Block Diagram of MB90077PF104

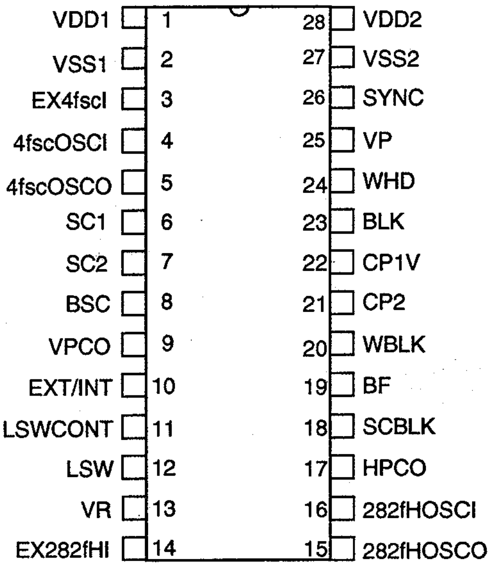

SCLK
STB
SIN
Serial to Parallel Cinversion
8-bit Latch
Command Decoder
Bank Control
Register Control
Data Bus
Vertical Indication Position Register
Horizontal Indication Position Register
Write Column Address
Write Row Address
Column Address Counter
Row Address Counter
VRAM Read Address Indication Position Detedt
VRAM Access Control
Indication Memory VRAM 11-bit x 228
VMODE
VSYNC
HSYNC
Sync Control Section
Vertical Position Counter
CGROM Raster Counter
Horizontal Position Counter
XDOUT
XD
EXD
Dot Clock Generator
Caracter Size Mask Pulse
Screen Indication CGROM Access Control
VOB
VBB
VOG
VBG
VOR
VBR
LHP
Dot Oscillation Control Register
Character, Back and Frame Indication Control Register
Blink Period Counter
Character Generator ROM (12 x 18)-dot x 128-character
Vcc
Vss

13. IC921 on the Main Board is using the Sync Separator IC MN53007LVW1.
Description of this IC is as follows:


SCOSC1
HSCPC0
NC
SC113S
NC
VSS
TEST1
TEST2
TEST3
NC
NC
44 43 42 41 40 39 38 37 36 35 34
SCOSC0
NC
FSC4
NC
NC
FREQ
PCR
HO4
HO5
HREF
NC
1 2 3 4 5 6 7 8 9 10 11
HONIT1
HONIT2
HONIT3
NC
NC
EXT
LSWCNT
VR
NC
HPCO
HS
33 32 31 30 29 28 27 26 25 24 23
12 13 14 15 16 17 18 19 20 21 22
NC
NC
EXSYNC.
PAL
RSTI
VDD
NC
V
WHDI
IN
NOUT
MN53007LVW

Pin	Name	In/Out	Description
1	SCOSCO	Out	SC Oscillator output terminal; 4Fsc
2	NC		
3	FSC4	Out	Clock Oscillator output terminal
4	NC		
5	NC		
6	.FREQ	Out	Not used.
7	FPCR	Out	Not used.
8	HO4	Out	Not used.
9	HO5	Out	Not used.
10	HREF	Out	Not used.
11	NC		
12	NC		
13	NC		
14	EXSYNC	In	Composite Sync signal input terminal.
15	PAL	In	PAL/NTSC switching signal input terminal; H = PAL
16	RSTI	In	Reset signal input terminal; reset for internal counter.
17	VDD	–	D+5V
18	V	In	V Pulse input terminal.
19	NC		
20	WHDI	In	WHD signal input terminal; connect with pin 21.
21	IN	In	Connect with pin 20.
22	NOUT	Out	Not used.
23	HS	In	HPCO Reference phase output signal terminal.
24	HPCO	Out	Phase comparison between HS and EXSYNC output terminal.
25	NC		
26	VR	Out	V reset output terminal.
27	LSWCNT	Out	Line Switch Control signal terminal; FV/4
28	EXT	Out	Sync mode switching output terminal.
29	NC		
30	NC		
31	MONIT3	Out	Not used.
32	MONIT2	Out	Not used.
33	MONIT1	OUT	Not used.
34	NC		
35	NC	–	Connect to ground.
36	TEST3	–	Connect to ground.
37	TEST2	–	Connect to ground.
38	TEST1	–	Connect to ground.
39	VSS	–	Ground
40	NC		
41	SC1135	Out	Not used.
42	NC		
43	HSCPCO	Out	Phase Comparator output terminal.
44	SCOSCI	In	SC Oscillator input terminal; 4Fsc

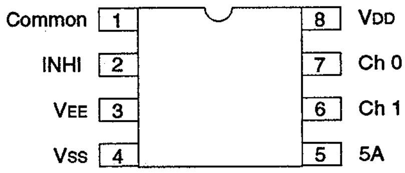
14. IC925 on the Main Board is using the PAL Sync Signal Generator IC MN676021PPS.
Description of this IC is as follows:


VDD1 1
VSS1 2
EX4fscI 3
4fscOSCI 4
4fscOSCO 5
SC1 6
SC2 7
BSC 8
VPCO 9
EXT/INT 10
LSWCONT 11
LSW 12
VR 13
EX282fHI 14
15 282fHOSCO
16 282fHOSCI
17 HPCO
18 SCBLK
19 BF
20 WBLK
21 CP2
22 CP1V
23 BLK
24 WHD
25 VP
26 SYNC
27 VSS2
28 VDD2

(TOP VIEW)

Pin	Name	In/Out	Description
1	VDD1	–	OUT+5V
2	VSS1	–	Ground
3	EX4fscI	In	External Clock input terminal.
4	4fscOSCI	In	Crystal Oscillator input terminal.
5	4fscOSCO	Out	Not used.
6	SC1	Out	fsc output terminal for (B–Y)
7	SC2	Out	fsc output terminal for (R–Y)
8	BS2	Out	Burst signal output terminal.
9	VPCO	Out	Not used.
10	EXT/INT	In	Sync mode switching control input terminal.
11	LSWCONT	In	Line Switch Control signal input terminal.
12	LSW	Out	Line Switch signal output terminal.
13	VR	In	Vertical Reset signal input terminal.
14	EX282fHI	In	External Clock input terminal; 282fH.
15	282fHOSCO	Out	Not used.
16	282fHOSCI	In	Connect to ground.
17	HPCO	Out	Phase Comparator output terminal.
18	SCBLK	Out	Not used.
19	BF	Out	Burst Flag signal output terminal.
20	WBLK	Out	Not used..
21	CP2	Out	Not used.
22	CP1V	Out	Composite Clamp Pulse for Black level reproduce output terminal.
23	BLK	Out	Composite Blanking signal output terminal.
24	WHD	Out	Wide HD signal output terminal.
25	VP	Out	Vertical Drive signal output terminal.
26	SYNC	Out	Composite Sync output terminal.
27	VSS2	–	Ground
28	VCC2	–	OUT+5V

15. IC203 and IC924 on the Main Board are using the 2-ch Multiplexer/Demultiplexer IC YWTC4W53FL.
Description of this IC is as follows:

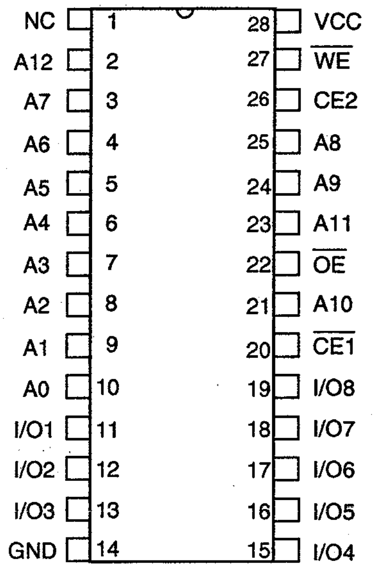

Common 1
INHI 2
VEE 3
Vss 4
8 VDD
7 Ch 0
6 Ch 1
5 5A

CONTROL INPUT		FUNCTION
INHI	A	
L	L	Ch0
L	H	Ch1
H	*	NOTE

* Don't Care.

16. IC913 on the Main Board is using Static RAM IC CXK5864BSPL.

Description of this IC is as follows:

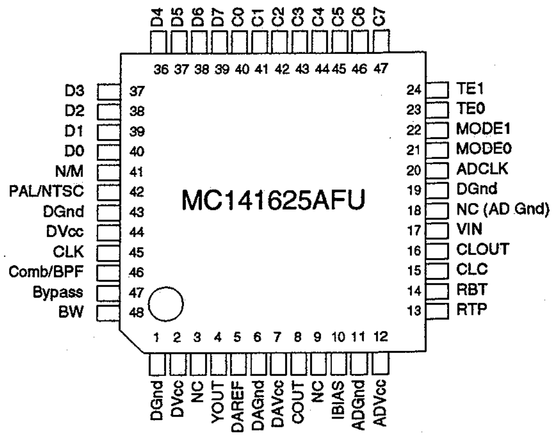

NC 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
I/O1 11
I/O2 12
I/O3 13
GND 14
28 VCC
27 WE
26 CE2
25 A8
24 A9
23 A11
22 OE
21 A10
20 CE1
19 I/O8
18 I/O7
17 I/O6
16 I/O5
15 I/O4

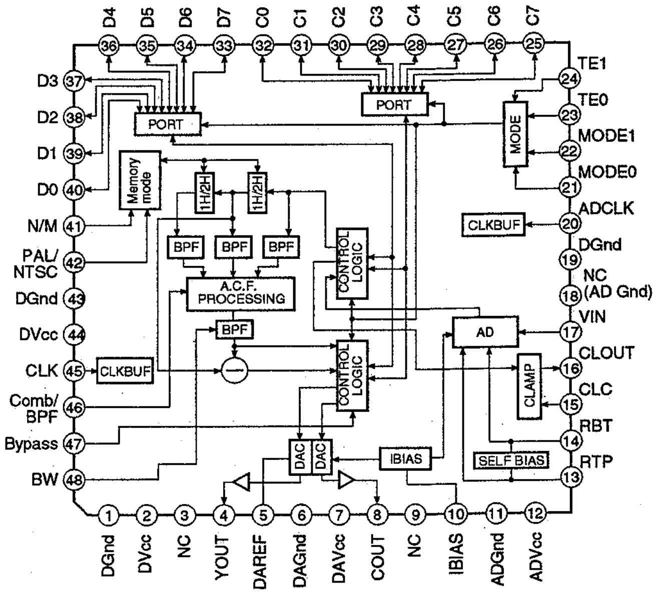
(TOP VIEW)

Pin	Name	In/Out	Description
1	NC	–	No connection
2	A12	In	Address input terminals
3	A7		
4	A6		
5	A5		
6	A4		
7	A3		
8	A2		
9	A1		
10	A0		
11	I/O1	In/ Out	Data In/Out terminals
12	I/O2		
13	I/O3		
14	GND	–	Ground
15	I/O4	In/ Out	Data In/Out terminals
16	I/O5		
17	I/O6		
18	I/O7		
19	I/O8		
20	$\overline{\text{CE1}}$	In	Chip Enable 1 input terminal
21	A10	In	Address input terminal
22	$\overline{\text{OE}}$	In	Output Enable input terminal
23	A11	In	Address input terminals
24	A9		
25	A8		
26	CE2	In	Chip Enable 2 input terminal
27	$\overline{\text{WE}}$	In	Write Enable input terminal
28	VCC	–	OUT+5VA

17. IC101, IC301, and IC501 on the Main Board are using the Advanced PAL Comb Filter IC YWMC141625AFU.

Description of this IC is as follows:

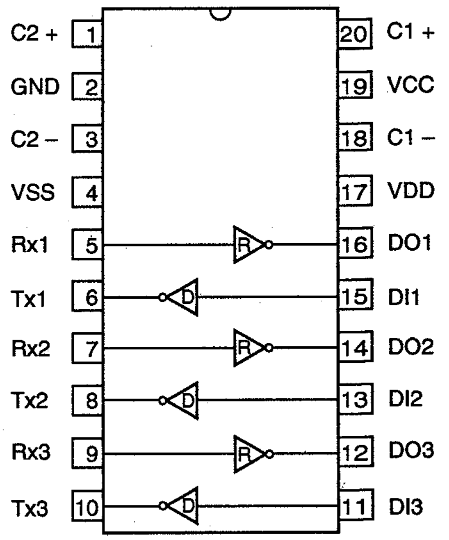

MC141625AFU
D4 D5 D6 D7 C0 C1 C2 C3 C4 C5 C6 C7
36 37 38 39 40 41 42 43 44 45 46 47
D3 37
D2 38
D1 39
D0 40
N/M 41
PAL/NTSC 42
DGnd 43
DVcc 44
CLK 45
Comb/BPF 46
Bypass 47
BW 48
24 TE1
23 TE0
22 MODE1
21 MODE0
20 ADCLK
19 DGnd
18 NC (AD Gnd)
17 VIN
16 CLOUT
15 CLC
14 RBT
13 RTP
1 2 3 4 5 6 7 8 9 10 11 12
DGnd DVcc NC YOUT DAREF DAGnd DAVcc COUT NC IBIAS ADGnd ADVcc


D4 D5 D6 D7 C0 C1 C2 C3 C4 C5 C6 C7
D3 D2 D1 D0 N/M PAL/ NTSC DGnd DVcc CLK Comb/ BPF Bypass BW
TE1 TE0 MODE1 MODE0 ADCLK DGnd NC (AD Gnd) VIN CLOUT CLC RBT RTP
PORT
PORT
MODE
Memory mode
1H/2H
1H/2H
BPF
BPF
BPF
A.C.F. PROCESSING
BPF
CONTROL LOGIC
CONTROL LOGIC
CLKBUF
CLKBUF
AD
CLAMP
DAC
DAC
IBIAS
SELF BIAS
DGnd DVcc NC YOUT DAREF DAGnd DAVcc COUT NC IBIAS ADGnd ADVcc

Pin	Name	In/Out	Description
1	DGND	–	Ground for Digital Circuit.
2	DVCC	–	A+5V
3	NC	–	Connect to ground.
4	YOUT	Out	Luminance signal output terminal.
5	DAREF	–	Reference terminal for D/A Converter.
6	DAGND	–	Ground for D/A Converter Circuit.
7	DAVCC	–	A+5V
8	COUT	Out	Chroma signal output terminal.

Pin	Name	In/Out	Description
9	NC	–	Connect to ground.
10	IBIAS	–	Current Control signal terminal for A/D, D/A Converters.
11	ADGND	–	Ground for A/D Converter Circuit.
12	ADVCC	–	A+5V
13	RTP	In	Top Reference Voltage terminal for AD Converter Circuit.
14	RBT	In	Bottom Reference Voltage terminal for AD Converter Circuit.
15	CLC	In	Clamp Time Constant setting terminal.
16	CLOUT	Out	Voltage for Clamp output terminal.
17	VIN	In	Input terminal for A/D Converter Circuit; 3.3Vp-p maximum.
18	NC	–	Connect to ground.
19	DGND	–	Ground for Digital Circuit.
20	ADCLK	–	Connect to ground.
21	MODE0	–	Connect to ground
22	MODE1	–	Connect to ground.
23	TE0	–	Connect to ground.
24	TE1	–	Connect to ground.
25	C7	–	Connect to ground.
26	C6	–	Connect to ground.
27	C5	–	Connect to ground.
28	C4	–	Connect to ground.
29	C3	–	Connect to ground.
30	C2	–	Connect to ground.
31	C1	–	Connect to ground.
32	C0	–	Connect to ground.
33	D0	–	Connect to ground.
34	D1	–	Connect to ground.
35	D2	–	Connect to ground.
36	D3	–	Connect to ground.
37	D4	–	Connect to ground.
38	D5	–	Connect to ground.
39	D6	–	Connect to ground.
40	D7	–	Connect to ground.
41	N/M	–	Connect to ground.
42	PAL/NTSC	In	Connect to ground; PAL mode.
43	DGND	–	Ground for Digital Circuit
44	DVCC	–	A+5V
45	CLK	In	Clock input terminal.
46	COMB/BPF	In	Connect to ground; Comb Filter mode.
47	BAYPASS	In	Connect to ground.
48	BW	In	Band switching input terminal for Chroma signal; set to narrow band.

18. IC916 on the Main Board is using the Line (EIA-RS232D/CCITTV.28) 3-Drivers and 3-Receivers IC YWMC145407F.
Description of this IC is as follows:

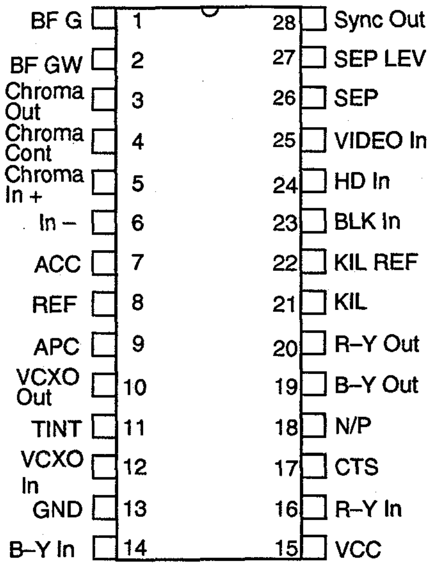


(TOP VIEW)

D: Driver
R : Receiver

19. IC 106, IC306, and IC506 on the Main Board are using the Chroma Difference Decoder IC YWM51271FP.

Description of this IC is as follows:

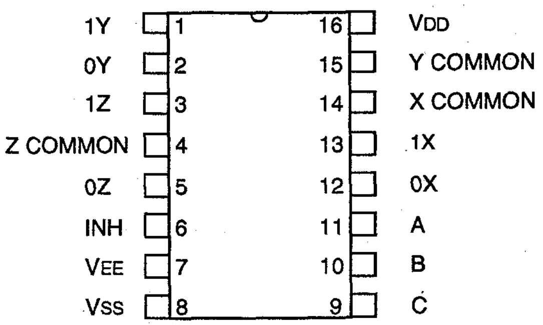

BF G
BF GW
Chroma Out
Chroma Cont
Chroma In +
In −
ACC
REF
APC
VCXO Out
TINT
VCXO In
GND
B–Y In
1
2
3
4
5
6
7
8
9
10
11
12
13
14
28
27
26
25
24
23
22
21
20
19
18
17
16
15
Sync Out
SEP LEV
SEP
VIDEO In
HD In
BLK In
KIL REF
KIL
R–Y Out
B–Y Out
N/P
CTS
R–Y In
VCC

(TOP VIEW)

Pin	Name	In/Out	Description
1	BF G	Out	Burst gate Pulse position output terminal.
2	BF GW	In	Burst Gate Pulse Width adjust input terminal.
3	C OUT	Out	Chroma signal output terminal.
4	C CONT	In	Chroma Saturation Control input terminal.
5	C IN +	In	Chroma signal Input terminal
6	IN−	−	Input Bypass Capacitor connecting terminal.
7	ACC	−	ACC Filter connecting terminal.
8	REF	−	Reference Voltage.
9	APC	−	APC Filter connecting terminal.
10	VCXO OUT	Out	VCOX output terminal.
11	TINT	In	Tint control signal input terminal.
12	VCXO IN	In	VCOX input terminal.
13	GND	−	Ground
14	B–Y IN	In	B–Y signal input terminal.
15	VCC	−	A+5V
16	R–Y IN	In	R–Y signal input terminal.
17	N/P	In	PAL/NTSC switch signal input terminal.
18	SC	Out	Subcarrier (180°) signal output terminal.
19	B–Y OUT	Out	B–Y signal output terminal.
20	R–Y OUT	Out	R–Y signal output terminal.
21	KIL	−	Killer Filter capacitor conneting terminal.
22	KIL REF	−	Killer Reference Filter capacitor connecting terminal.
23	BLK IN	In	BLK Pulse input terminal.
24	HD IN	In	HD Pulse input terminal.
25	VIDEO IN	In	Sync separated Video signal input terminal.
26	SEP	−	Sync Separator feedback capacitor connecting capacitor.
27	SEP LEV	In	Sync Separator Slice Level input terminal.
28	SYNC OUT	Out	Sync output terminal.

20. IC1, IC701, IC705, IC721, IC758, and IC766 on the Main Board are using the Triple 2-ch Analog Multiplexer/Demultiplexer IC UPD74HC4053G.

Description of this IC is as follows;


1Y
0Y
1Z
Z COMMON
0Z
INH
VEE
Vss
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
VDD
Y COMMON
X COMMON
1X
0X
A
B
C

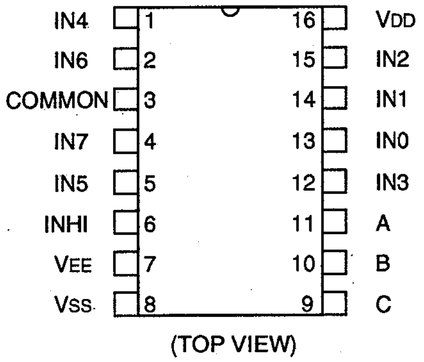
(TOP VIEW)

Truth Table

INHIBIT	C	B	A	X COMMON	Y COMMON	Z COMMON
L	L	L	L	0X	0Y	0Z
L	L	L	H	1X	0Y	0Z
L	L	H	L	0X	1Y	0Z
L	L	H	H	1X	1Y	0Z
L	H	L	L	0X	0Y	1Z
L	H	L	H	1X	0Y	1Z
L	H	H	L	0X	1Y	1Z
L	H	H	H	1X	1Y	1Z
H	*	*	*	NONE	NONE	NONE

* : Don't care.

21. IC2 to IC6 on the Main Board are using the Analog Multiplexer/Demultiplexer IC UPD74HC4051G.
Description of this IC is as follows:

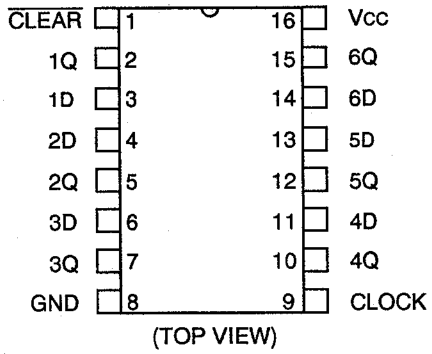

IN4
1
16
VDD
IN6
2
15
IN2
COMMON
3
14
IN1
IN7
4
13
IN0
IN5
5
12
IN3
INHI
6
11
A
VEE
7
10
B
Vss
8
9
C
(TOP VIEW)

Truth Table

INHIBIT	C	B	A	COMMON
L	L	L	L	IN0
L	L	L	H	IN1
L	L	H	L	IN2
L	L	H	H	IN3
L	H	L	L	IN4
L	H	L	H	IN5
L	H	H	L	IN6
L	H	H	H	IN7
H	*	*	*	NONE

* : Don't care.

22. IC7 and IC915 on the Main Board, and IC2 on the Front Board are using the Hex D-FFs IC MC75HC174AF.
Description of this IC is as follows:

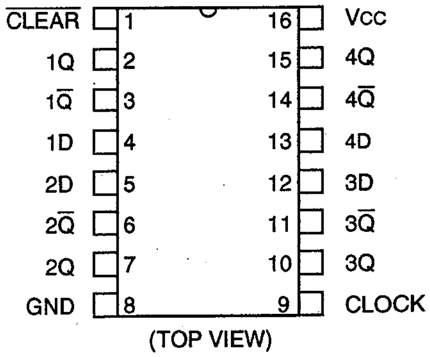

$\overline{CLEAR}$
1
16
Vcc
1Q
2
15
6Q
1D
3
14
6D
2D
4
13
5D
2Q
5
12
5Q
3D
6
11
4D
3Q
7
10
4Q
GND
8
9
CLOCK
(TOP VIEW)

Truth Table

INPUT			OUTPUT		Function
$\overline{CLR}$	D	CK	Q	$\overline{Q}$	
L	*	*	L	H	Clear
H	L	↑	L	H	—
H	H	↑	H	L	—
H	*	↓	Qn	$\overline{Qn}$	No Change

* : Don't care.

23. IC9 on the Main Board is using the Quad D-FFs IC YWMC74HC175AF.
Description of this IC is as follows:

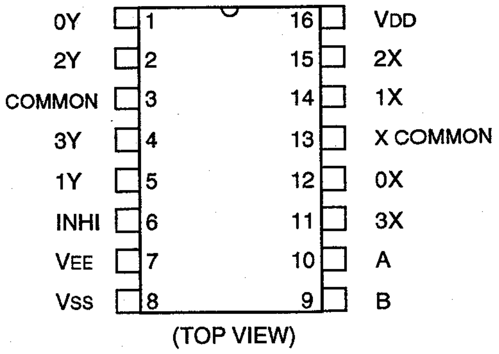

$\overline{CLEAR}$
1
16
Vcc
1Q
2
15
4Q
$1\overline{Q}$
3
14
$4\overline{Q}$
1D
4
13
4D
2D
5
12
3D
$2\overline{Q}$
6
11
$3\overline{Q}$
2Q
7
10
3Q
GND
8
9
CLOCK
(TOP VIEW)

Truth Table

INPUT			OUTPUT		Function
$\overline{CLR}$	D	CK	Q	$\overline{Q}$	
L	*	*	L	H	Clear
H	L	↑	L	H	—
H	H	↑	H	L	—
H	*	↓	Qn	$\overline{Qn}$	No Change

* : Don't care.

24. IC11, IC12, IC14, and IC15 on the Main Board are using the Dual 4-ch Multiplexer/Demultiplexer IC UPD74HC4052G.
Description of this IC is as follows:

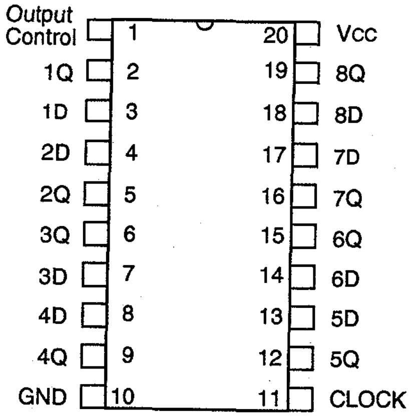

0Y
1
16
VDD
2Y
2
15
2X
COMMON
3
14
1X
3Y
4
13
X COMMON
1Y
5
12
0X
INHI
6
11
3X
VEE
7
10
A
Vss
8
9
B
(TOP VIEW)

Truth Table

INHIBIT	B	A	X COMMON	Y COMMON
L	L	L	0X	0Y
L	L	H	1X	1Y
L	H	L	2X	2Y
L	H	H	3X	3Y
H	*	*	NONE	NONE

* : Don't care.

25. IC8 and IC917 on the Main Board are using the Octal 3-State D-FFs IC MC74HC374AF.
Description of this IC is as follows:


Output Control 1
1Q 2
1D 3
2D 4
2Q 5
3Q 6
3D 7
4D 8
4Q 9
GND 10
20 Vcc
19 8Q
18 8D
17 7D
16 7Q
15 6Q
14 6D
13 5D
12 5Q
11 CLOCK

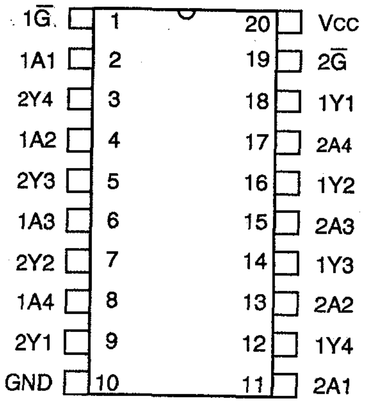
(TOP VIEW)

Truth Table

INPUT			OUTPUT	
Output Control	D	CK	Q	$\overline{Q}$
*	L	↑	L	H
*	H	↑	H	L
H	*	*	Z	

*: Don't care.
Z : High Impedance

26. IC711, IC719, IC914, and IC927 on the Main Board are using the Octal 3-State Bus Buffer IC YWMC74HC244AF.
Description of this IC is as follows:


1G̅ 1
1A1 2
2Y4 3
1A2 4
2Y3 5
1A3 6
2Y2 7
1A4 8
2Y1 9
GND 10
20 Vcc
19 2G̅
18 1Y1
17 2A4
16 1Y2
15 2A3
14 1Y3
13 2A2
12 1Y4
11 2A1

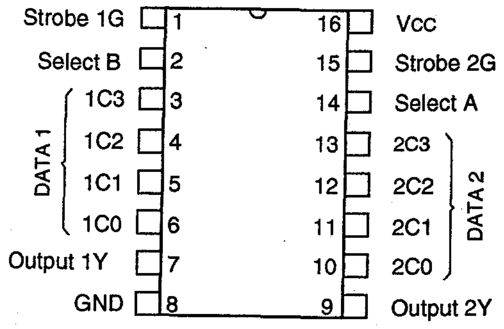
(TOP VIEW)

Truth Table

INPUT		OUTPUT
G	A	Y
H	*	Z
L	L	L
L	H	H

*: Don't care.
Z : High Impedance

27. IC713, IC714, IC726, and IC727 on the Main Board are using the Dual 4 to 1 Data Selector IC YWMC74HC153AF.
Description of this IC is as follows:


Strobe 1G 1
Select B 2
1C3 3
1C2 4
1C1 5
1C0 6
DATA 1
Output 1Y 7
GND 8
16 Vcc
15 Strobe 2G
14 Select A
13 2C3
12 2C2
11 2C1
10 2C0
DATA 2
9 Output 2Y

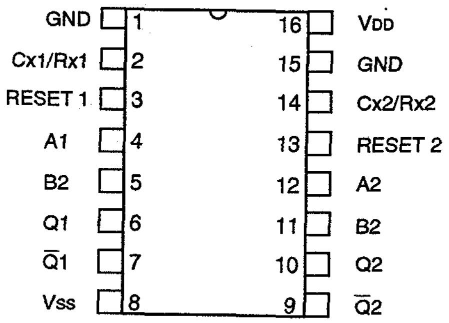
(TOP VIEW)

Truth Table

INPUT			OUTPUT
SELECT		STROBE	Y
B	A	G	
*	*		L
L	L	L	C0
L	H	L	C1
H	L	L	C2
H	H	L	C3

*: Don't care.

28. IC108, IC308, IC508, and IC923 on the Main Board are using the Dual Precision Retriggerable Monostable Multivibrator IC MC74HC4538AF.
Description of this IC is as follows:


GND 1
Cx1/Rx1 2
RESET 1 3
A1 4
B2 5
Q1 6
Q̅1 7
Vss 8
16 VDD
15 GND
14 Cx2/Rx2
13 RESET 2
12 A2
11 B2
10 Q2
9 Q̅2

(TOP VIEW)

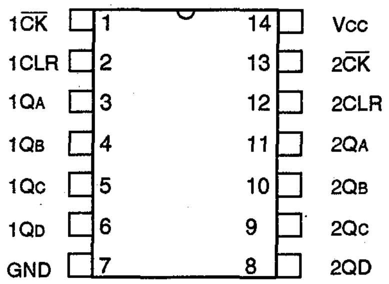
Truth Table

INPUT			OUTPUT		NOTE
A	B	RESET	Q	$\overline{Q}$	
↑	H	H	⎍	⊔	Output Pulse
↑	L	H	L	H	Inhibit
H	↓	H	L	H	Inhibit
L	↓	H	⎍	⊔	Output Pulse
*	*	L	L	H	Inhibit

*: Don't care.

29. *IC16 to IC18, and IC905 on the Main Board are* using the Dual Binary Counter IC YWMC74HC393-AF.

Description of this IC is as follows:


$1\overline{CK}$
1CLR
1QA
1QB
1QC
1QD
GND
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Vcc
$2\overline{CK}$
2CLR
2QA
2QB
2QC
2QD

(TOP VIEW)

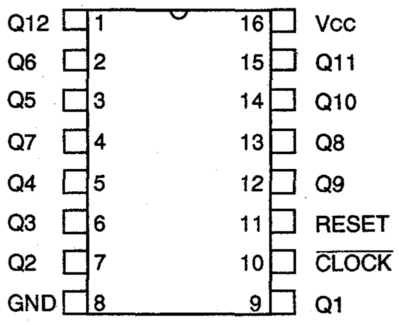
Truth Table

INPUT		OUTPUT			
$\overline{CK}$	CLR	QA	QB	QC	QD
*	H	L	L	L	L
↓	L	Count Up			
↑	L	Count Down			

* : Don't care.

30. *IC756 on the Main Board is using the 12-Stage* Binary Ripple Counter IC MC74HC4040AF.

Description of this IC is as follows:


Q12
Q6
Q5
Q7
Q4
Q3
Q2
GND
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
Vcc
Q11
Q10
Q8
Q9
RESET
$\overline{CLOCK}$
Q1

(TOP VIEW)

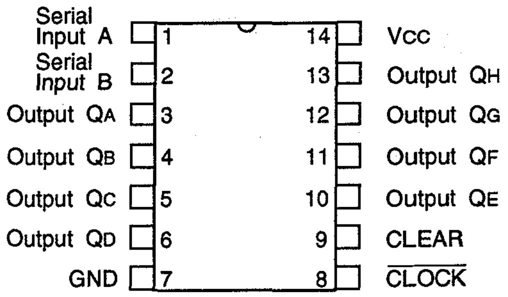
Truth Table

$\overline{CLOCK}$	RESET	Qn OUTPUT
*	H	L
↑	L	Don't Count
↓	L	Binary Count

* : Don't care.

31. IC767 on the Main Board is using the 8-Bit Shift Register IC YWMC74HC164AF.

Description of this IC is as follows:


Serial Input A
Serial Input B
Output QA
Output QB
Output QC
Output QD
GND
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Vcc
Output QH
Output QG
Output QF
Output QE
CLEAR
$\overline{CLOCK}$

(TOP VIEW)

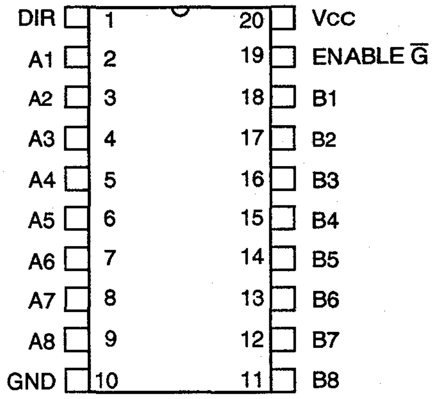
Truth Table

INPUT		Function
CLEAR	CLOCK	
H	↑	Right Shift
⊔	*	Clear

* : Don't care.

32. IC906 on the Main Board is using the Octal 3-State Bus Buffer Transceivers IC YWMC74HC245AF.

Description of this IC is as follows:


DIR
A1
A2
A3
A4
A5
A6
A7
A8
GND
1
2
3
4
5
6
7
8
9
10
20
19
18
17
16
15
14
13
12
11
Vcc
ENABLE $\overline{G}$
B1
B2
B3
B4
B5
B6
B7
B8

(TOP VIEW)

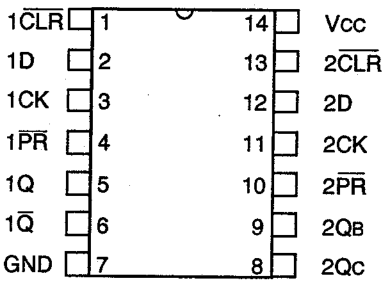
Truth Table

DIR	$\overline{G}$	Function
H	L	A ⟶ B
L	L	B ⟶ A
*	H	A OFF B

* : Don't care.

33. IC757, IC733, IC920, IC929 on the Main Board and IC1 on the Sub Board are using the D-Latch IC YWMC74HC74AF.

Description of this IC is as follows:


1CLR
1D
1CK
1PR
1Q
1Q
GND
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Vcc
2CLR
2D
2CK
2PR
2QB
2QC

(TOP VIEW)

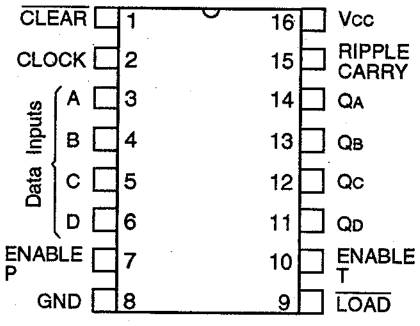
Truth Table

INPUT				OUTPUT		Function
$\overline{\text{CLR}}$	$\overline{\text{PR}}$	D	CK	Q	$\overline{\text{Q}}$	
L	H	*	*	L	H	Clear
H	L	*	*	H	L	Preset
L	L	*	*	H	H	—
H	H	L	↑	L	H	—
H	H	H	↑	H	L	—
H	H	*	↓	Qn	$\overline{\text{Qn}}$	No Change

* : Don't care.

34. IC3 on the Sub Board is using the Synchronous Presettable BCD Counter with Clear IC YWMC-74HC138AF.

Description of this IC is as follows:


CLEAR
CLOCK
Data Inputs
A
B
C
D
ENABLE P
GND
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
Vcc
RIPPLE CARRY
QA
QB
QC
QD
ENABLE T
LOAD

(TOP VIEW)

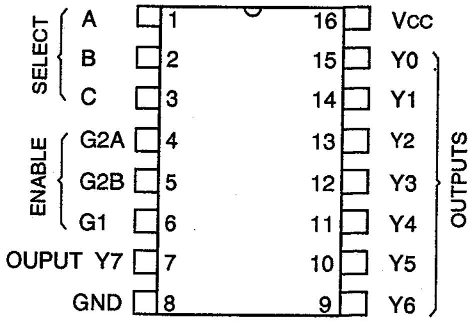
Truth Table

INPUT					OUTPUT		Function
$\overline{\text{Clear}}$	$\overline{\text{Load}}$	CK	Enable P	Enable T	QA QB QC QD	Ripple Carry	
H	H	↑	H	H			Count
H	L		*	*	DA DB DC DD		Data Set
⊔	*	*	*	*	L L L L		Clear
H	*	*	*	H	H L L H	⊓	–

* : Don't care.

35. IC907 and IC908 on the Main Board are using the 3 to 8 Demultiplexer IC YWMC74HC138AF.

Description of this IC is as follows:


SELECT
A
B
C
ENABLE
G2A
G2B
G1
OUPUT Y7
GND
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
Vcc
Y0
Y1
Y2
Y3
Y4
Y5
Y6
OUTPUTS

(TOP VIEW)

Truth Table

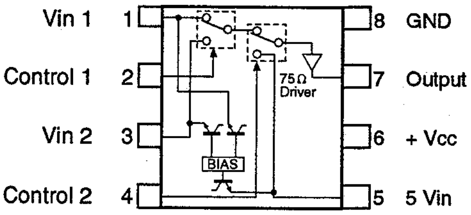
INPUT					OUTPUT							
ENABLE		SELECT										
G1	G2*1	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
*	H	*	*	*	H	H	H	H	H	H	H	H
L	*	*	*	*	H	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	H	H	H	H	H
H	L	L	L	H	H	L	H	H	H	H	H	H
H	L	L	H	L	H	H	L	H	H	H	H	H
H	L	L	H	H	H	H	H	L	H	H	H	H
H	L	H	L	L	H	H	H	H	L	H	H	H
H	L	H	L	H	H	H	H	H	H	L	H	H
H	L	H	H	L	H	H	H	H	H	H	L	H
H	L	H	H	H	H	H	H	H	H	H	H	L

*1 G2 : G2A + G2B

* : Don't care.

36. IC744 on the Main Board is using the 3-Input Video Switch with Clamp Circuit IC YWNJM2244M.

Description of this IC is as follows:


Vin 1
Control 1
Vin 2
Control 2
1
2
3
4
8
7
6
5
GND
Output
+ Vcc
5 Vin
75Ω Driver
BIAS

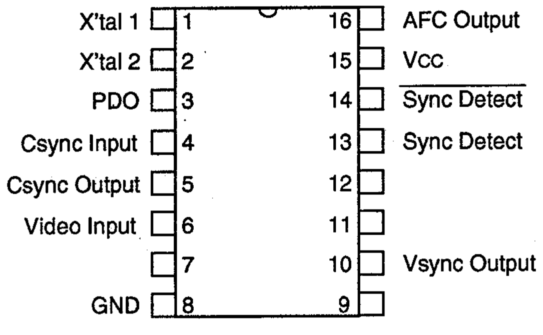
(TOP VIEW)

Control 1	Control 2	Output
L	L	Vin 1
H	L	Vin 2
*	H	Vin 3

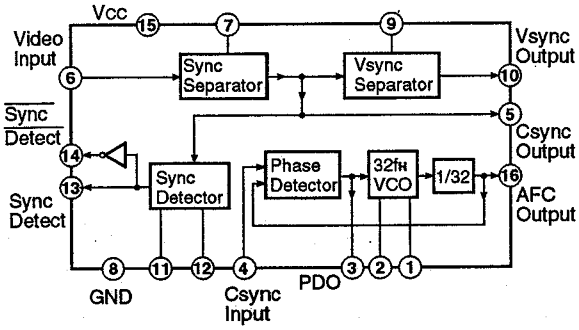
* : Don't care.

37. IC109 is using the Sync Separator with AFC IC YWNJM2229M.

Description of this IC is as follows:

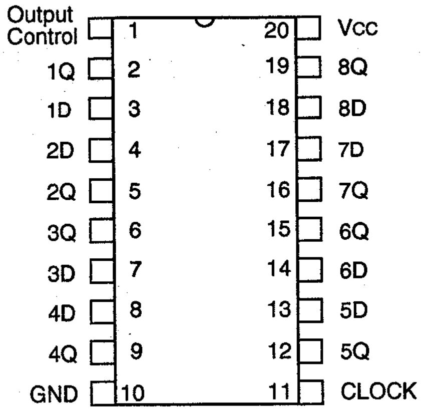

X'tal 1
X'tal 2
PDO
Csync Input
Csync Output
Video Input
GND
AFC Output
Vcc
$\overline{\text{Sync Detect}}$
Sync Detect
Vsync Output
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

(TOP VIEW)


Vcc
Video Input
$\overline{\text{Sync Detect}}$
Sync Detect
GND
Csync Input
PDO
Vsync Output
Csync Output
AFC Output
Sync Separator
Vsync Separator
Sync Detector
Phase Detector
32fH VCO
1/32
15
7
9
6
10
5
14
13
16
8
11
12
4
3
2
1

38. IC1 on the Front Board is using the Octal D-FFs IC MC74HC273AF.

Description of this IC is as follows:


Output Control
1Q
1D
2D
2Q
3Q
3D
4D
4Q
GND
Vcc
8Q
8D
7D
7Q
6Q
6D
5D
5Q
CLOCK
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

(TOP VIEW)

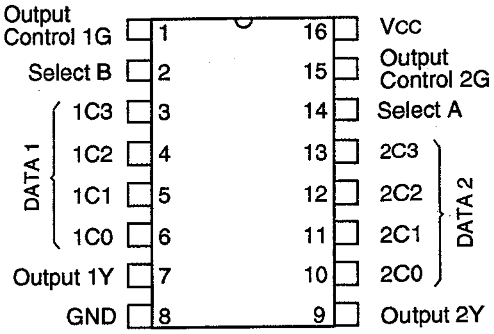
Truth Table

INPUT			OUTPUT	
Output Control	D	CK	Q	$\overline{Q}$
*	L	↑	L	H
*	H	↑	H	L
H	*	*	Z	

*: Don't care.
Z: High Impedance

39. IC1 and IC2 on the Rear Board are using the Dual 3-State 4 to 1 Data Selectors IC YWMC74HC253-AF.

Description of this IC is as follows:


Output Control 1G
Select B
1C3
1C2
1C1
1C0
DATA 1
Output 1Y
GND
Vcc
Output Control 2G
Select A
2C3
2C2
2C1
2C0
DATA 2
Output 2Y
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

(TOP VIEW)

Truth Table

INPUT			OUTPUT
SELECT		OUTPUT CONTROL	Y
B	A	G	
*	*	H	Z
L	L	L	C0
L	H	L	C1
H	L	L	C2
H	H	L	C3

*: Don't care.
Z: High Impedance

ADJUSTMENT PROCEDURE

1. Test Equipments Required

- The following Test Equipments are required for adjustment of the WJ-FS20.
- Underscanned Colour Video Monitor
- Vectorscope
- Waveform Monitor
- Signal Generator
  - Colour Bar Signal
  - Ramp Signal (with and without Carrier)
  - Composite Sync Signal
  - Sweep Signal or Multiburst Signal (more than 10MHz)
- Oscilloscope
- Frequency Counter
- Digital Voltmeter
- Black and White Camera

2. Disassembling for the Adjustment

- Referring to Fig. 2-1, remove five screws fixing the Upper Cover, then remove the Upper Cover.

Remove five screws.

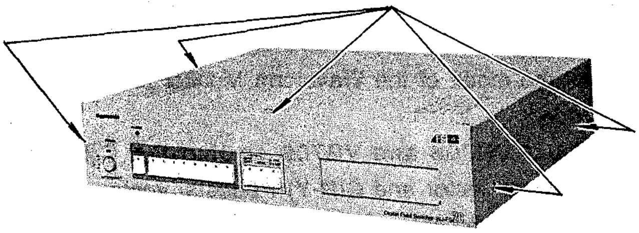
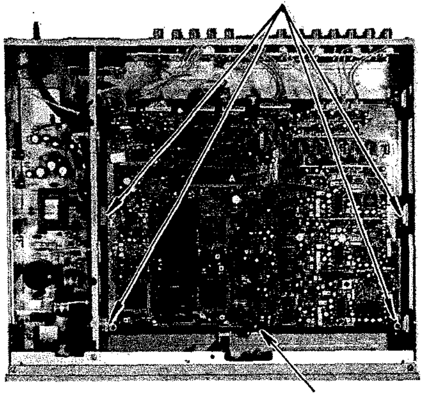


Fig. 2-1

- Referring to Fig. 2-2, remove four screws fixing the Main Board Ass'y, release the lock of the PCB Support on the Front Panel side.

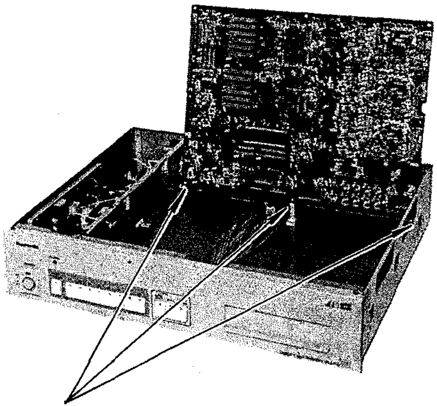
Remove four screws.



Release the lock.

Fig. 2-2

- Referring to Fig. 2-3, turn the Main Board to the Rear Panel side, then hook the three holes of the Main Board to the PCB Supports in the Rear Panel Side.



Hook the three holes of the Main Board to the PCB Supports.

Fig. 2-3

3. Connection and Setting Up

3.1. Connection

- Fig. 3-1 shows the connecting diagram for adjustment of the WJ-FS20.

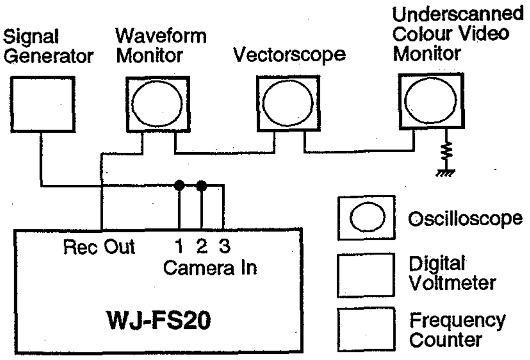


Fig 3-1

- Connect the Underscanned Colour Video Monitor through the Vectorscope and Waveform Monitor to the Rec Out Connector on the Rear Panel of the WJ-FS20.
- Terminate the input terminal of the Underscanned Colour Video Monitor with 75Ω.
- Connect the Signal Generator to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Connect the probe of the Oscilloscope, Digital Voltmeter and the Frequency Counter to desired Test Point in each adjustment step.

3.2. Setting Up

- This adjustment should be made after 30 minutes warm up of the WJ-FS20.
- Setting of the Switches for adjustment are as follows:

Front Sub Board Ass'y
SW (REMOTE) : OFF
Main Board Ass'y
SW901 (RECOVER) : VTR
SW902 (MASK) : ON

4. Adjustment

- Refer to the Location of the Test Points and the Adjusting Controls on page 36.

(1) +5V Adjustment

Test Point:	**TP1 (+5V)**	**Power Board**
Adjust:	**VR1 (+5V)**	**Power Board**

- Disconnect all input signals from the WJ-FS20.
- Connect the Digital Voltmeter to TP1.
- Adjust VR1 to obtain +5.10V ± 0.02V.

(2) -5V Confirmation

Test Point:	**TP2 (-5V)**	**Power Board**

- Disconnect all input signals from the WJ-FS20.
- Connect the Digital Voltmeter to TP2.
- Confirm that the voltage at TP2 should be within -5.0 ± 0.25 V.

■ Set the unit to the Reference Adjustment Mode for the next Adjustment Steps as follows:

- Turn the Power Switch of the WJ-FS20 to OFF.
- Turn the Power Switch on while pressing the MENU, Cursor (►) and SELECT (–) buttons simultaneously.

  Note: Release the Menu, Cursor (►) and SELECT (–) buttons after all Key LEDs on the Front Panel have been lit except the Power LED.

(3) SC Frequency Adjustment

Test Point:	**TP103 (RA SC)**	**Main Board**
	TP302 (RB SC)	**Main Board**
	TP502 (RC SC)	**Main Board**
Adjust:	**CT100 (RA SC)**	**Main Board**
	CT300 (RB SC)	**Main Board**
	CT500 (RC SC)	**Main Board**

- Disconnect all input signals from the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Connect the Frequency Counter to TP103, and use TP1 (GND) for the ground.
- Adjust CT100 to obtain 4.433618MHz ± 5Hz.
- Connect the Frequency Counter to TP302.
- Adjust CT300 to obtain 4.433618MHz ± 5Hz.
- Connect the Frequency Counter to TP502.
- Adjust CT500 to obtain 4.433618MHz ± 5Hz.

(4) 4fsc Frequency Adjustment

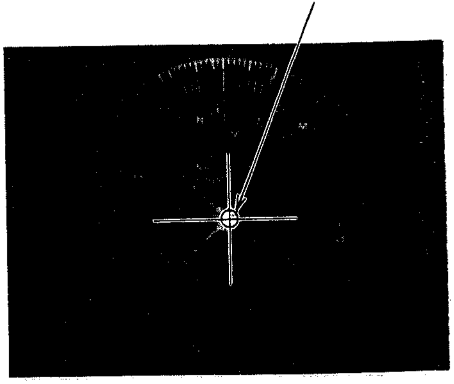
Test Point:	**TP903 (4fsc)**	**Main Board**
Adjust:	**VR901 (4fsc)**	**Main Board**

- Disconnect all input signals from the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Connect the Frequency Counter to TP903, and use TP3 (GND) for the ground.
- Adjust VR901 to obtain 17.734475MHz ± 20Hz.

(5) Encoder Section Adjustment

Test Point:	**Rec Out Connector**	**Rear Panel**
Adjust:	**VR706 (C(B-Y) Pedestal)**	**Main Board**
	VR709 (C(R-Y) Pedestal)	**Main Board**
	VR705 (Burst Level)	**Main Board**
	VR708 (Burst Phase)	**Main Board**
	VR704 (Y Level)	**Main Board**

- Supply the Composite Sync Signal to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Set the Gain Control of the Vectorscope to the maximum.
- Set the mode of the Waveform Monitor to Chroma Mode.
- Adjust VR706 and VR709 so that the C(B-Y) Pedestal vector and C(R-Y) Pedestal vector positioned at the center on the Vectorscope as shown in Fig. 4-1.



Positioned at center.

Fig. 4-1

- Confirm that the Chroma Pedestal becomes 0 $^{+14}_{-0}$ mVp-p as shown in Fig. 4-2.

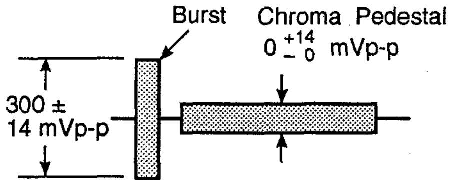


Fig. 4-2

- Set the Gain Control of the Vectorscope to the Normal position.
- Adjust VR705 so that the Burst Level becomes 300 ± 14 mVp-p as shown in Fig. 4-2.
- Adjust VR708 so that the Burst Level becomes 90 ± 2° as shown in Fig.3.

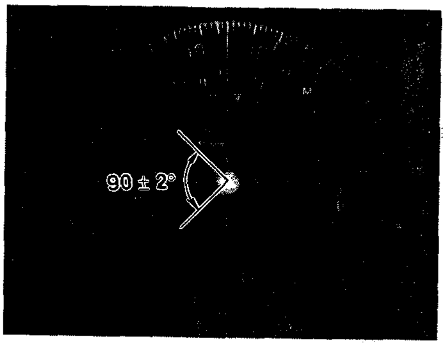


Fig. 4-3

- Change the mode of the Waveform Monitor to the Normal Mode.
- Press the CH1 button on the Front Panel of the WJ-FS20, then press the CH5 button.
- Adjust VR704 so that the Y (Divider Line) Level becomes 700 ± 14 mVp-p as shown in Fig. 4-4.

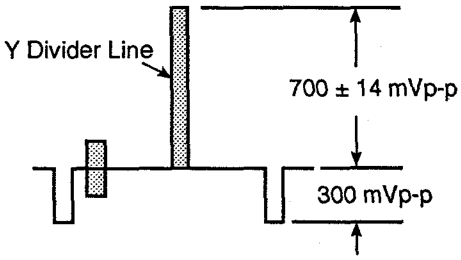


Fig. 4-4

(6) G/L PLL Adjustment

Test Point:	**TP701 (RA VBLK)**	**Main Board**
	TP702 (RB VBLK)	**Main Board**
	TP703 (RC VBLK)	**Main Board**
	TP704 (G/L PLL)	**Main Board**
Adjust:	**L714 (RA VBLK)**	**Main Board**
	L715 (RB VBLK)	**Main Board**
	L717 (RC VBLK)	**Main Board**
	L723 (G/L PLL)	**Main Board**

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Connect the Digital Voltmeter to TP701.
- Adjust L714 to obtain 2.5 ± 0.3V.
- Connect the Digital Voltmeter to TP702.
- Adjust L715 to obtain 2.5 ± 0.3V.
- Connect the Digital Voltmeter to TP703.
- Adjust L717 to obtain 2.5 ± 0.3V.
- Connect the Digital Voltmeter to TP704.
- Adjust L723 to obtain 2.5 ± 0.3V.

Note: According to RA, RB and RC, reffer to the Schematic Diagram of the Analog Process Section of the Main Board on page 45.

(7) PLL HD Phase Adjustment

Test Point:	**TP400 (RA HD)**	**Main Board**
	TP401 (RB HD)	**Main Board**
	TP402 (RC HD)	**Main Board**
Adjust:	**VR710 (RB HD)**	**Main Board**
	VR711 (RC HD)	**Main Board**

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Connect the Ch1 of the Oscilloscope to TP400.
- Connect the Ch 2 of the Oscilloscope to TP401.
- Trigger the Oscilloscope at TP400.
- Adjust VR710 so that the rising edge of the RB HD Pulse becomes within 0 ± 30 nsec from the rising edge of the RA HD Pulse as shown in Fig. 4-5.
- Change the Ch2 of the Oscilloscope to TP402.
- Adjust VR711 so that the rising edge of the RC HD Pulse becomes 0 ± 30 nsec from the rising edge of

the RA HD Pulse as shown in Fig. 4-5.

- Supply the Cross Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Press the CH4 Switch on the Front Panel of the WJ-FS20.
- Confirm that the Phase Difference in between becomes minimum.
  If not, readjust VR710 and VR711.

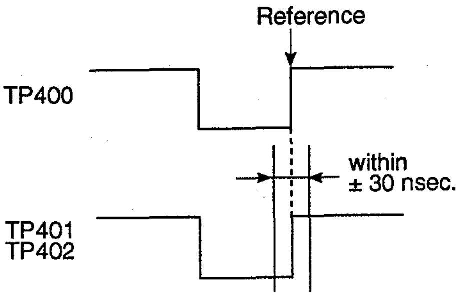


Fig. 4-5

(8) Burst Gate Pulse Adjustment

Test Point: **TP101 (RA Burst Gate Pulse)** **Main Board**
TP301 (RB Burst Gate Pulse) **Main Board**
TP501 (RC Burst Gate Pulse) **Main Board**

Adjust: **VR100(RA Burst Gate Pulse)** **Main Board**
VR300(RB Burst Gate Pulse) **Main Board**
VR500(RC Burst Gate Pulse) **Main Board**

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Connect the Ch1 of the Oscilloscope to TP109 on the Main Board.
- Connect the Ch2 of the Oscilloscope to TP101.
- Trigger the Oscilloscope at TP109.
- Turn VR100 to fully clockwise, then adjust VR100 slowly to counterclockwise to obtain 8.2 ± 0.2 µsec as shown in Fig. 4-6.
- Connect the Ch2 of the Oscilloscope to TP301.
  Turn VR300 to fully clockwise, then adjust VR300 slowly to counterclockwise to obtain 8.2 ± 0.2 µsec as shown in Fig. 4-6.
- Connect the Ch2 of the Oscilloscope to TP501.
- Turn VR500 to fully clockwise, then adjust VR500 slowly to counterclockwise to obtain 8.2 ± 0.2 µsec as shown in Fig. 4-6.

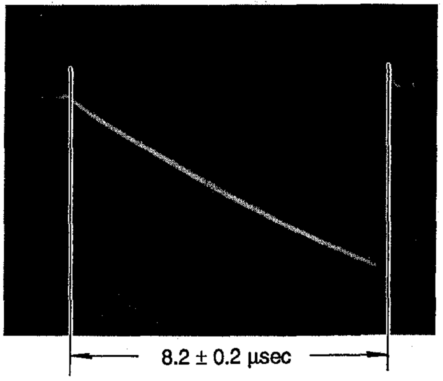


Fig. 4-6

(9) Chroma Separation Adjustment

Test Point: **TP107 (Chroma Level)** **Main Board**
TP105 (Carrier Level) **Main Board**

Adjust: **VR102 (RA Tint)** **Main Board**
VR103(Chroma Separation) **Main Board**
T111 (Chroma Gain) **Main Board**

- Supply the Ramp Signal with carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit th the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Connect the Ch1 of the Oscilloscope to TP109 on the Main Board.
- Connect the Ch2 of the Oscilloscope to TP107.
- Trigger the Oscilloscope at TP109.
- Set VR101 to its mechanical center position.
- Turn the core of T111 to counterclockwise until the core comes to the same level of the top surface of T111.
- Adjust VR102 so that the Chroma Level becomes maximum.
- Change the Ch2 of the Oscilloscope to TP105.
- Adjust VR103 so that the Chroma Level becomes minimum.
- Adjust T111 so that the Chroma Level becomes minimum.
- Repeat adjust VR103 and T111 alternately so that Carrier Level becomes minimum as shown in Fig. 4-

7.

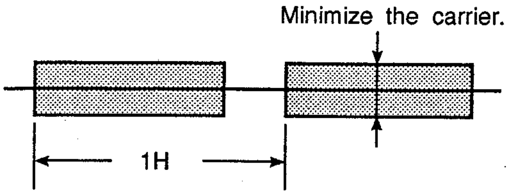


Fig. 4-7

(10) RA(Y, R-Y and B-Y) Adjustment

Test Point: **Rec Out Connector** **Rear Panel**

Adjust: **VR106 (RA(R-Y) Pedestal)** **Main Board**

VR107 (RA(B-Y) Pedestal) **Main board**

VR105 (RA(Y) Pedestal) **Main Board**

VR104 (RA(Y) Gain) **Main Board**

T111 (RA Chroma Gain) **Main Board**

VR102 (RA Tint) **Main Board**

VR101(RA(R-Y) Gain)Main Board

VR108(RA(B-Y) Gain)Main Board

VR703(R-Y Gain)Main Board

VR702(B-Y Gain)Main Board

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Set the Gain Control of the Vectorscope to the maximum.
- Adjust VR106 so that the RA(R-Y) Pedestal Vector positioned at the center on the Vectorscope as shown in Fig. 4-8.
- Adjust VR107 so that the RA(B-Y) Pedestal vector positioned at the center on the Vectorscope as shown in Fig. 4-8.
- Adjust VR105 so that the RA(Y) Pedestal level becomes 0^{+7}_{-0} mVp-p as shown in Fig. 4-9.
- Adjust VR104 so that the Y Level becomes 700 ± 14 mVp-p.
- Supply the Colour Bar Signal to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the Vectorscope to the NTSC mode.
- Adjust T111 and VR102 so that the Chroma Vector is laid overlapping in each area.
- Connect the Oscilloscope to TP107.

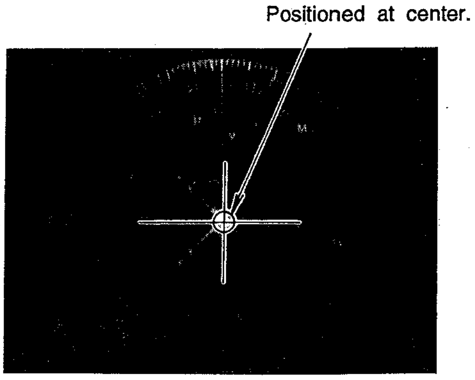


Fig. 4-8

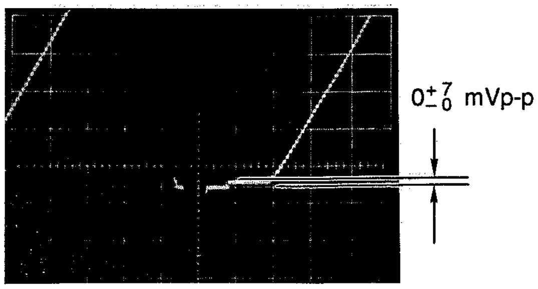


Fig. 4-9

- Adjust VR107 so that the RA(R-Y) Level becomes 1.3 ± 0.1 Vp-p as shown in Fig. 4-10.

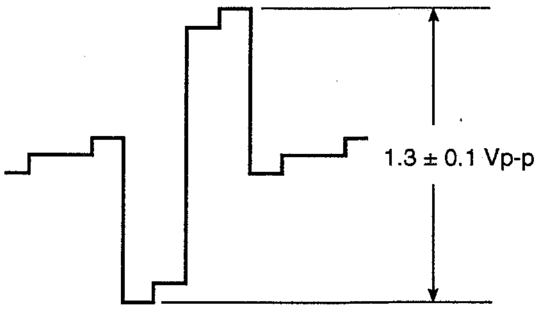


Fig. 4-10

- Connect the Oscilloscope to TP108.
- Adjust VR108 so that the RA(B-Y) Level becomes 1.0 ± 0.1 Vp-p as shown in Fig. 4-11.
- Observing the Vectorscope, adjust VR703 and VR702 so that each vector positions in each colour area as shown in Fig. 4-12.
- Repeat from the adjustment of T111 and VR102 in this step with the Colour Bar Signal to obtain specifi-

cation in Table 4-1.

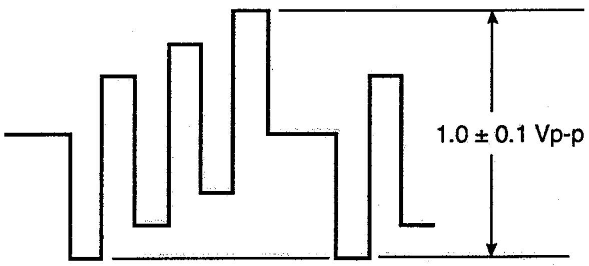


Fig. 4-11

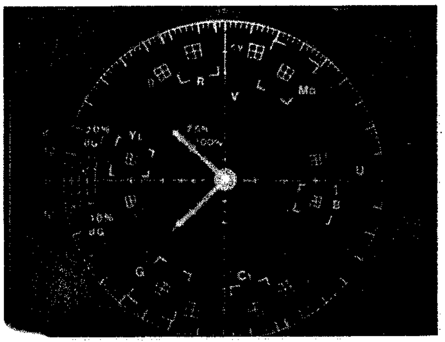


Fig. 4-12

	Phase	Chroma
R	103 ± 5°	220 ± 7°
CY	283 ± 7°	220 ± 7°
YL	167 ± 8°	155 ± 10°

Table 4-1

(11) RB(Y, R-Y and B-Y) Adjustment

Test Point: **Rec Out Connector** **Rear Panel**
Adjust: **VR306 (RB(R-Y) Pedestal)** **Main Board**
VR307 (RB(B-Y) Pedestal) **Main board**
VR305 (RB(Y) Pedestal) **Main Board**
VR304 (RB(Y) Gain) **Main Board**
VR301 (RB C Gain) **Main Board**
VR308 (RB(B-Y) Gain) **Main Board**
VR302 (RB Tint) **Main Board**

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH2 button on the Front Panel of the WJ-FS20.
- Set the Gain Control of the Vectorscope to the maximum.
- Adjust VR306 so that the RB(R-Y) Pedestal Vector positioned at the center on the Vectorscope as shown in Fig. 4-13.

Positioned at center.

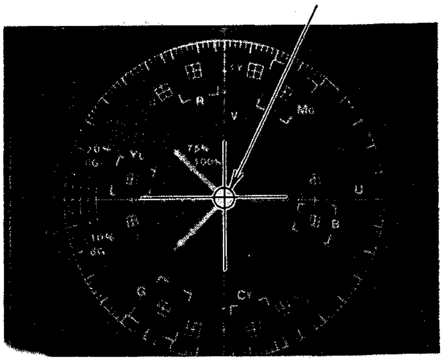


Fig. 4-13

- Adjust VR307 so that the RB(B-Y) Pedestal vector positioned at the center on the Vectorscope as shown in Fig. 4-13.
- Adjust VR305 so that the RB(Y) Pedestal level becomes 0 $^{+7}_{-0}$ mVp-p as shown in Fig. 4-14.
- Adjust VR304 so that the Y Level becomes 700 ± 14 mVp-p.

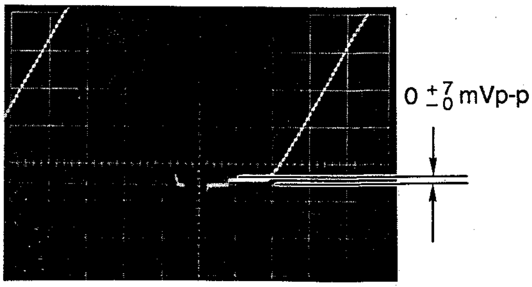


Fig. 4-14

- Supply the Colour Bar Signal to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the Vectorscope to the NTSC mode.
- Observing the Vectorscope, adjust VR301 and VR308 so that each vector positions in each colour area as shown in Fig. 4-15.

- Adjust VR302 so that the Chroma Phase becomes correct position as shown in Fig. 4-15.
- Repeat from the adjustment of VR301 and VR308 in this step with the Colour Bar Signal to obtain specification in the Table 4-2.

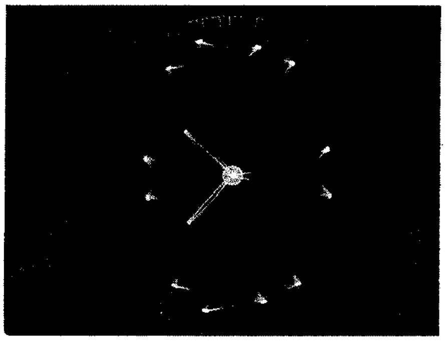


Fig 4-15

	Phase	Chroma
R	103 ± 5°	220 ± 7°
CY	283 ± 7°	220 ± 7°
YL	167 ± 8°	155 ± 10°

Table 4-2

(12) RC(Y, R-Y and B-Y) Adjustment

Test Point:	**Rec Out Connector**	**Rear Panel**
Adjust:	**VR506 (RC(R-Y) Pedestal)**	**Main Board**
	VR507 (RC(B-Y) Pedestal)	**Main board**
	VR505 (RC(Y) Pedestal)	**Main Board**
	VR504 (RC(Y) Gain)	**Main Board**
	VR501 (RC C Gain)	**Main Board**
	VR508 (RC(B-Y) Gain)	**Main Board**
	VR502 (RC Tint)	**Main Board**

- Supply the Ramp Signal without carrier to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH3 button on the Front Panel of the WJ-FS20.
- Set the Gain Control of the Vectorscope to the maximum.
- Adjust VR506 so that the RC(R-Y) Pedestal vector positioned at the center on the Vectorscope as shown in the Fig. 4-16.
- Adjust VR507 so that the RC(B-Y) Pedestal Vector positioned at the center on the Vectorscope as shown in Fig. 4-16.

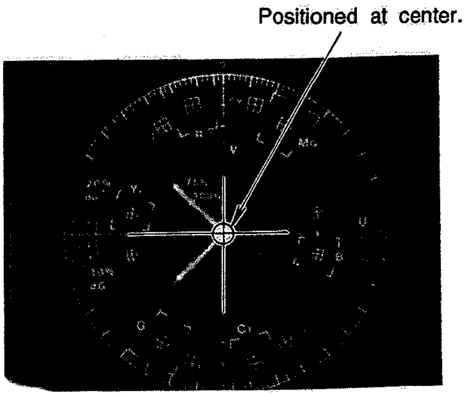


Fig. 4-16

- Adjust VR505 so that the RC(Y) Pedestal level becomes 0^{+7}_{-0} mVp-p as shown in Fig. 4-17.
- Adjust VR504 so that the Y Level becomes 700 ± 14 mVp-p.

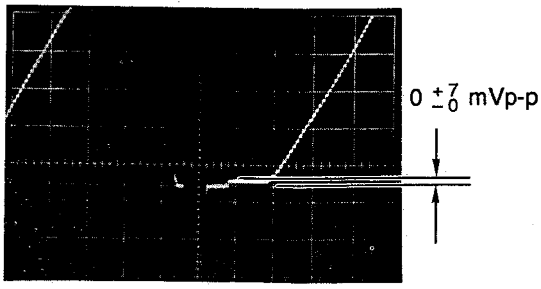


Fig. 4-17

- Supply the Colour Bar Signal to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the Vectorscope to the NTSC mode.
- Observing the Vectorscope, adjust VR501 and VR508 so that each Chroma Vector positions its correct position respectively as shown in Fig. 4-18.
- Adjust VR502 so that the Chroma Phase becomes correct position as shown in Fig. 4-18.
- Repeat from adjustment of VR501 and VR508 in this step with the Colour Bar Signal to obtain specification in the Table 4-3.

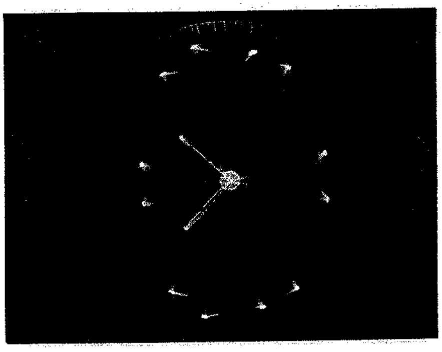


Fig. 4-18

	Phase	Chroma
R	103 ± 5°	220 ± 7°
CY	283 ± 7°	220 ± 7°
YL	167 ± 8°	155 ± 10°

Table 4-3

(13) Confirmation of Rec Out Signal Waveform

Test Point: **Rec Out Connector** **Rear Panel**

- Supply the Black and White Camera Signal or the Black and White Step Signal (without Burst Signal) to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Confirm that the Rec Out Signal of the RA mode should be normal waveform.
- Press the CH2 button on the Front Panel of the WJ-FS20.
- Confirm that the Rec Out Signal of the RB mode should be normal waveform.
- Press the CH3 button on the Front Panel of the WJ-FS20.
- Confirm that the Rec Out Signal of RC mode should be normal waveform.

(14) Confirmation of Frequency Response

Test Point: **Rec Out Connector** **Rear Panel**

- Supply the Sweep Signal to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
Press the CH1 button on the Front Panel of the WJ-FS20.
- Confirm that the Frequency Response of RA mode at 5MHz should be within ± 3 dB against the Input Sweep Signal.
- Press the CH2 button on the Front Panel of the WJ-FS20.
- Confirm that the Frequency Response of RB mode at 5MHz should be within ± 3 dB against the Input Sweep Signal.
- Press the CH3 button on the Front Panel of the WJ-FS20.
- Confirm that the Frequency Response of RC mode at 5MHz should be within ± 3 dB against the Input Sweep Signal.

(15) Character Position Adjustment

Test Point: **Rec Out Connector** **Rear Panel**

Adjustment: **CT902 (Character Position)** **Main Board**

CT901 (Character Divider) **Main Board**

- Supply the Composite Sync Signal (Luminance set-up for approximately 20%) to the Camera Input Connectors 1, 2 and 3 on the Rear Panel of the WJ-FS20.
- Set the unit to the Reference Adjustment mode.
- Press the CH1 button on the Front Panel of the WJ-FS20.
- Press the SEQUENCE button on the Front Panel of the WJ-FS20 so that Fig. 4-19 will be displayed on the Underscanned Colour Video Monitor.

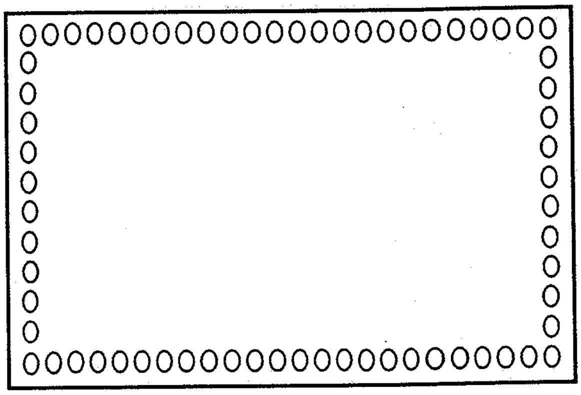
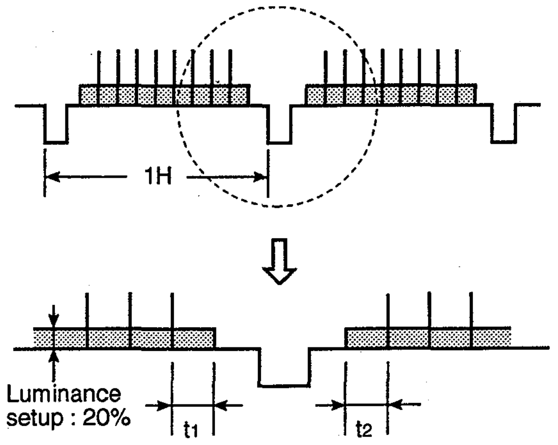


Fig. 4-19

- Connect the Oscilloscope to the Rec Out Connector.
- Adjust CT902 so that the difference of the character position (t1 − t2) becomes ± 1 μsec as shown in Fig.

4-20.


1H
Luminance setup : 20%
t1
t2

Character Position
t1 = t2 (within ± 1 µsec)

Fig. 4-20

- Press the CH5 button on the Front Panel of the WJ-FS20 so that the Character Divider shown in Fig. 4-21 will be displayed on the Underscanned Colour Video Monitor.

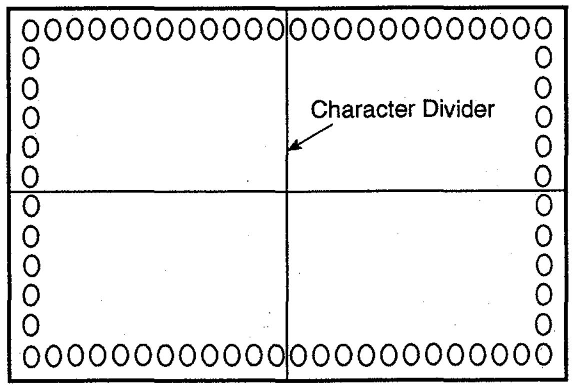
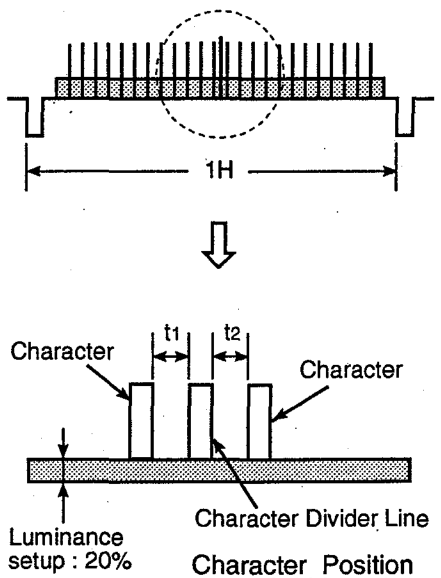

Character Divider

Fig. 4-21

- Adjust CT1 so that the Character Divider becomes center of the Characters as shown in Fig. 4-22.
The difference between t1 and t2 should be less than ± 0.1µsec.

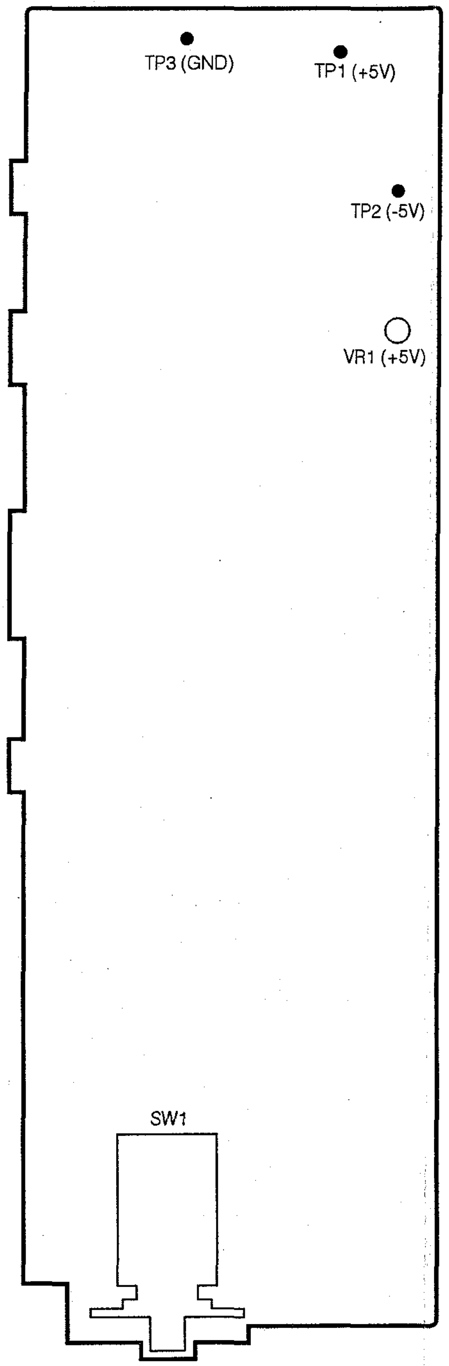

1H
Character
t1
t2
Character
Character Divider Line
Luminance setup : 20%

Character Position
t1 = t2 (within ± 0.1 µsec)

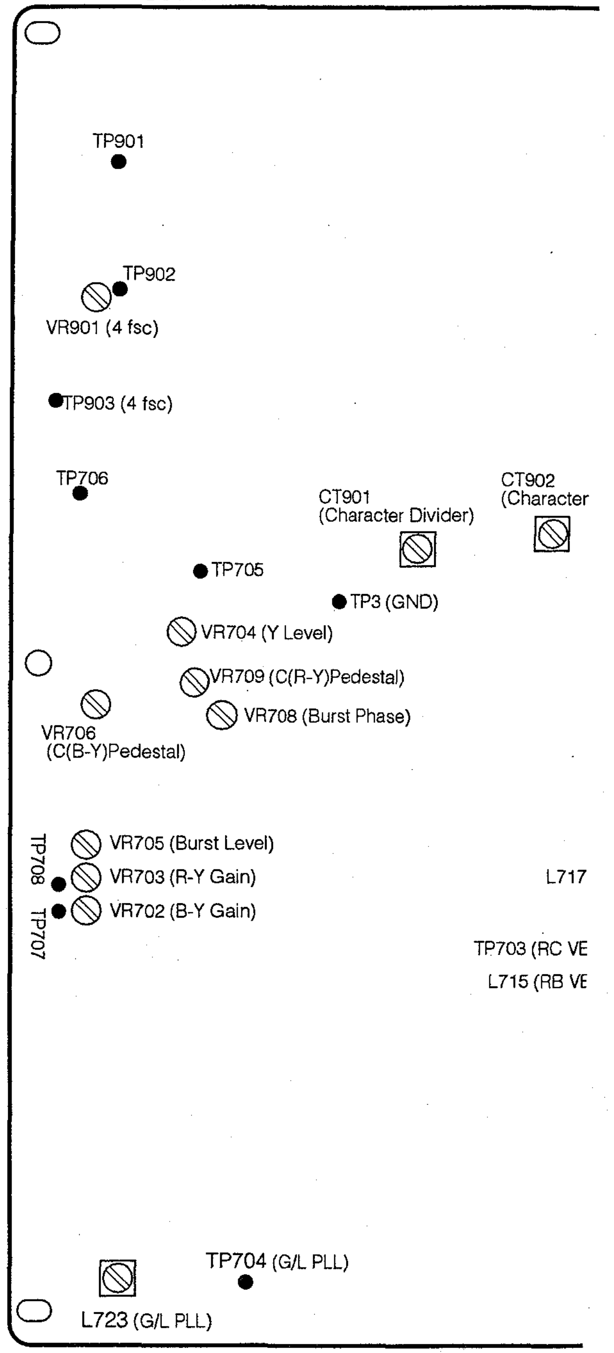
Fig. 4-22

LOCATION OF TEST POINTS

POWER BOARD


TP3 (GND)
TP1 (+5V)
TP2 (-5V)
VR1 (+5V)
SW1

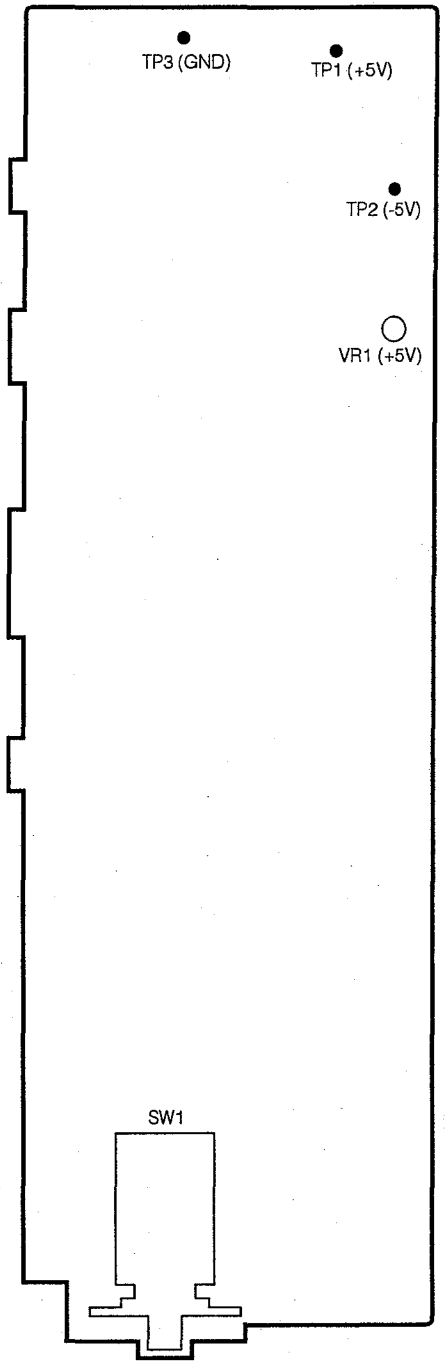
MAIN BOARD


TP901
TP902
VR901 (4 fsc)
TP903 (4 fsc)
TP706
CT901 (Character Divider)
CT902 (Character
TP705
TP3 (GND)
VR704 (Y Level)
VR709 (C(R-Y)Pedestal)
VR708 (Burst Phase)
VR706 (C(B-Y)Pedestal)
VR705 (Burst Level)
TP708
VR703 (R-Y Gain)
TP707
VR702 (B-Y Gain)
L717
TP703 (RC VE
L715 (RB VE
TP704 (G/L PLL)
L723 (G/L PLL)

LOCATION OF TEST POINTS AND ADJUSTING CONTROLS

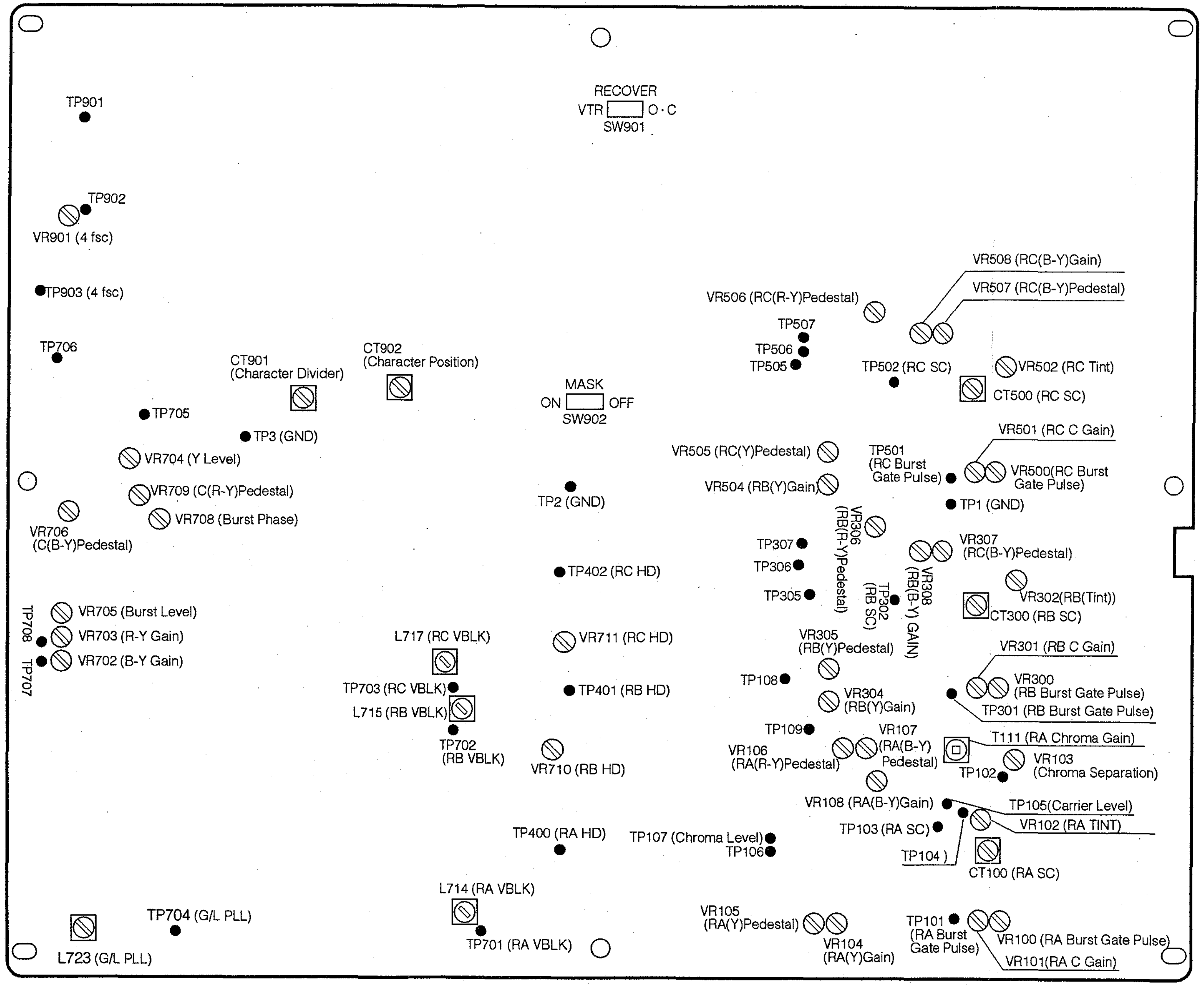
sec)

POWER BOARD



TP3 (GND)
TP1 (+5V)
TP2 (-5V)
VR1 (+5V)
SW1

MAIN BOARD



TP901
RECOVER
VTR
O·C
SW901
TP902
VR901 (4 fsc)
TP903 (4 fsc)
VR508 (RC(B-Y)Gain)
VR507 (RC(B-Y)Pedestal)
VR506 (RC(R-Y)Pedestal)
TP507
TP506
TP505
TP502 (RC SC)
VR502 (RC Tint)
CT500 (RC SC)
TP706
CT901
(Character Divider)
CT902
(Character Position)
MASK
ON
OFF
SW902
TP705
TP3 (GND)
VR704 (Y Level)
VR709 (C(R-Y)Pedestal)
VR708 (Burst Phase)
VR706
(C(B-Y)Pedestal)
TP2 (GND)
VR501 (RC C Gain)
VR505 (RC(Y)Pedestal)
TP501
(RC Burst
Gate Pulse)
VR500(RC Burst
Gate Pulse)
VR504 (RB(Y)Gain)
TP1 (GND)
VR306
(RB(R-Y)Pedestal)
TP307
TP306
TP305
VR307
(RC(B-Y)Pedestal)
TP402 (RC HD)
TP302
(RB SC)
VR308
(RB(B-Y) GAIN)
VR302(RB(Tint))
CT300 (RB SC)
TP708
TP707
VR705 (Burst Level)
VR703 (R-Y Gain)
VR702 (B-Y Gain)
L717 (RC VBLK)
VR711 (RC HD)
VR305
(RB(Y)Pedestal)
VR301 (RB C Gain)
TP703 (RC VBLK)
L715 (RB VBLK)
TP401 (RB HD)
TP108
VR304
(RB(Y)Gain)
VR300
(RB Burst Gate Pulse)
TP301 (RB Burst Gate Pulse)
TP702
(RB VBLK)
VR710 (RB HD)
TP109
VR106
(RA(R-Y)Pedestal)
VR107
(RA(B-Y)
Pedestal)
T111 (RA Chroma Gain)
TP102
VR103
(Chroma Separation)
VR108 (RA(B-Y)Gain)
TP105(Carrier Level)
VR102 (RA TINT)
TP400 (RA HD)
TP107 (Chroma Level)
TP106
TP103 (RA SC)
TP104)
CT100 (RA SC)
L714 (RA VBLK)
TP704 (G/L PLL)
L723 (G/L PLL)
TP701 (RA VBLK)
VR105
(RA(Y)Pedestal)
VR104
(RA(Y)Gain)
TP101
(RA Burst
Gate Pulse)
VR100 (RA Burst Gate Pulse)
VR101(RA C Gain)

APPEARANCE OF IC, TRANSISTOR AND DIODE

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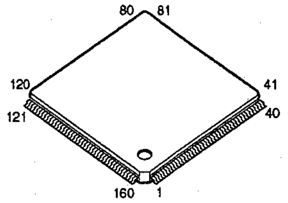
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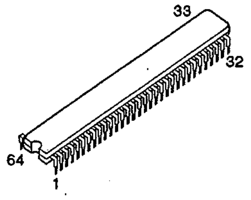

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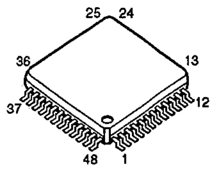
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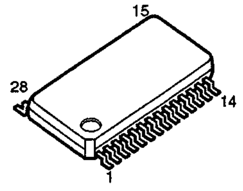

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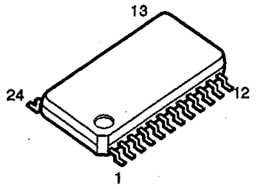

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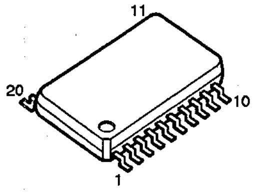

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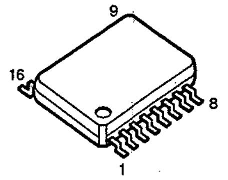

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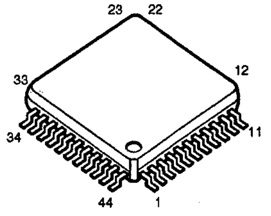
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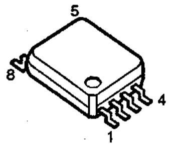

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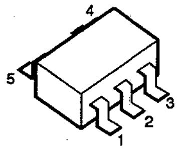

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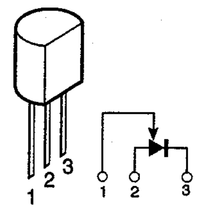

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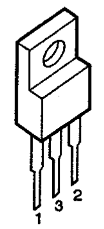

1: Ground
2: Output
3: Input

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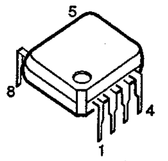

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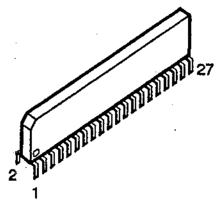

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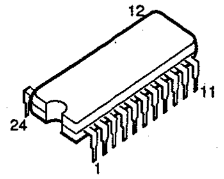

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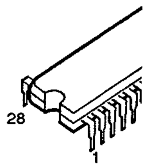

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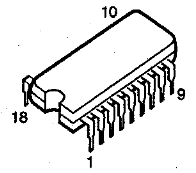

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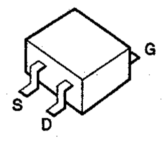

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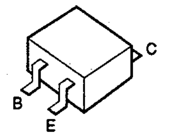

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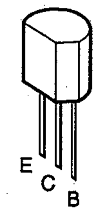

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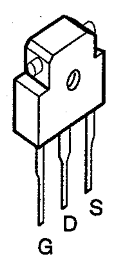

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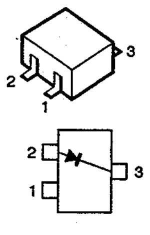

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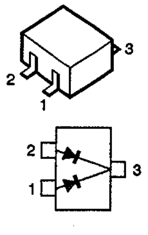

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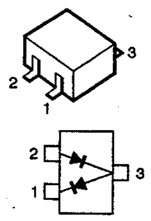

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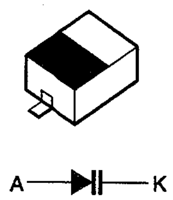

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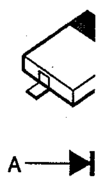

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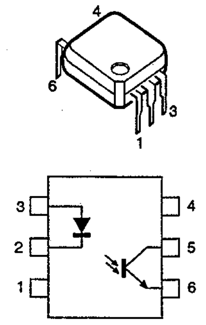
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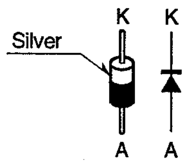
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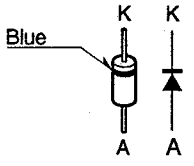

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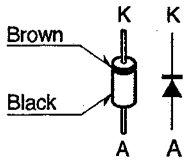
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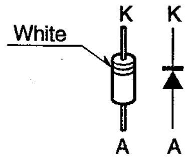

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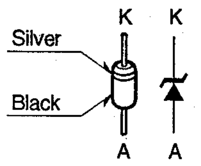
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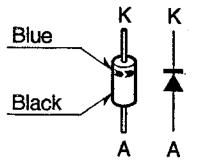
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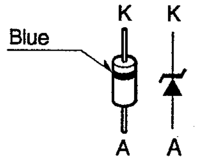

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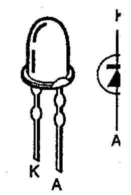
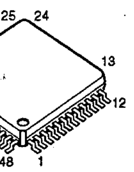


APPEARANCE OF IC, TRANSISTOR AND DIODE

141625AFU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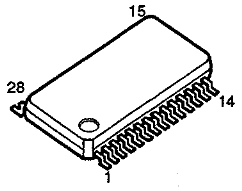

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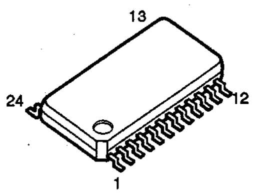

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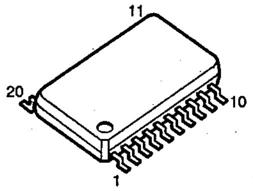

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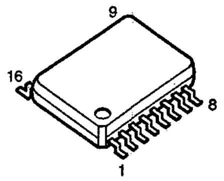

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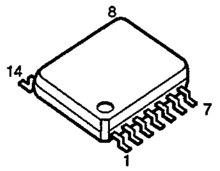

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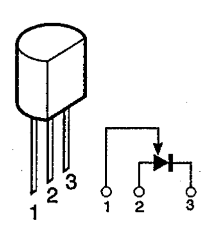

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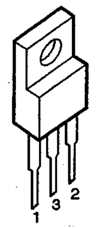

1: Ground
2: Output
3: Input

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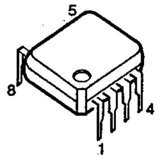

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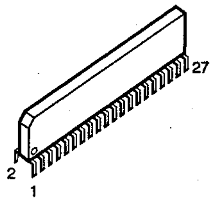

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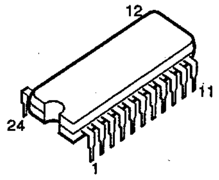

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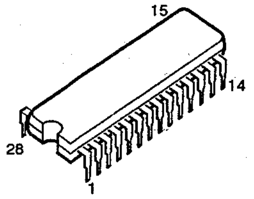

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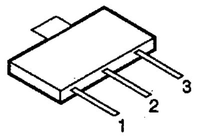

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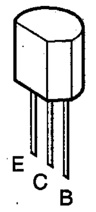

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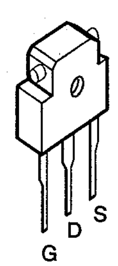

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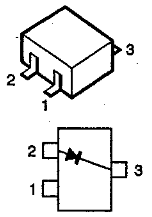

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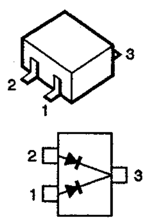

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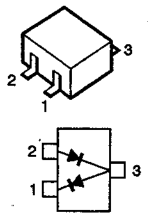

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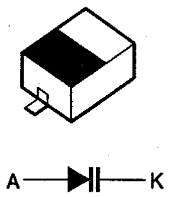

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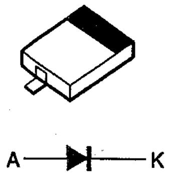

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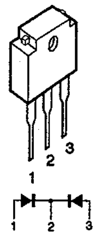
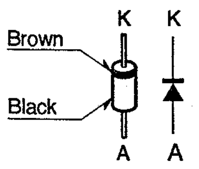
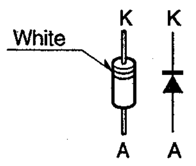


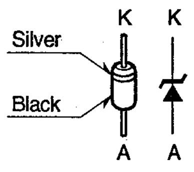
RU1P


Brown
Black
K
K
A
A

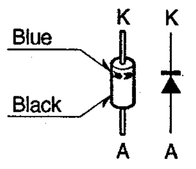
MA165



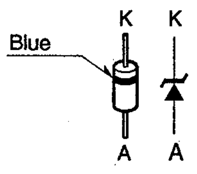
YWEQA0325


Silver
Black
K
K
A
A

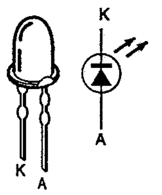
YWERA84009


Blue
Black
K
K
A
A

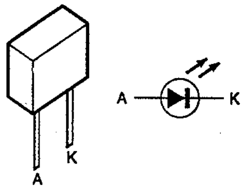
RD5.1JB2



SLH38MC
LN29RD



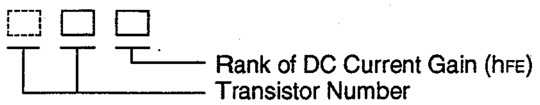
MN53007LVW1



CHIP COMPONENTS

1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical number and two alphabet letters.


Rank of DC Current Gain (hFE)
Transistor Number

Transistor Number

(Chip Transistor)

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1A	2SB799
E	2SA1022	1B	2SB814
F	2SA1034	1C	2SB902
H	2SA1035	1F	2SK321
I	2SB792	1K	2SK316
K	2SC2778	1L	2SK247
P	2SD814	1M	2SJ84
Q	2SD813	1N	2SK199
R	2SC2480	1O	2SK198
S	2SC2405	1T	2SC3077
T	2SC2406	1X	2SC2845
U	2SC2404	1Z	2SD1030
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116

(Small Chip Transistor)

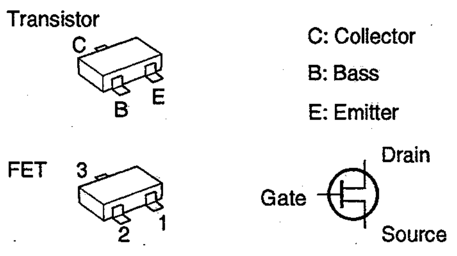
Letter	Transistor No.
A	2SB1218
U	2SC3931
W	2SD1820
Y	2SD1819
E3	2SA1226
OS	2SB1219
UC	2SA1532
YU	2SC3938

(Pair Transistor)

Letter	Transistor No.
5C	XN4601
5N	XN6501
5O	XN6401

Example: WQ → 2SD602-Q
YQ → 2SD601-Q
1BS → 2SB814-S

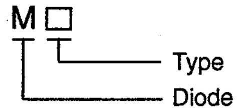
Appearance and Symbols


Transistor
C
B
E
C: Collector
B: Bass
E: Emitter
FET
3
2
1
Drain
Gate
Source

	1	2	3
Except 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

2. Chip Diode

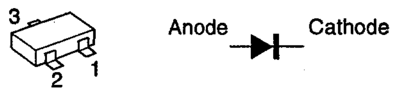
The diode number is indicated on the top surface of the chip diode using two alphabet letters.


M
Type
Diode

Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK

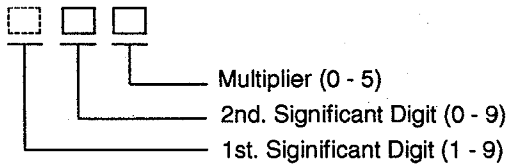
Appearance and Symbol


3
2
1
Anode
Cathode

	1	2	3
MA28/MA28W/MA28T	-	Anode	Cathode
MA151K/MA152K	-	Anode	Cathode
MA151A/MA152A	-	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Cathode

3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.


Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

Example:

330 → $33 \times 10^0 = 33\,\Omega$

561 → $56 \times 10^1 = 560\,\Omega$

123 → $12 \times 10^3 = 12\,k\Omega$

Note: Zero ohm resistor (jumper chip) is colored red or green.

4. Chip Capacitor

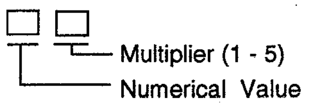
The capacitive value of replacement chip capacitors is indicated on the bottom surface. original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

Example:

0.5 → 0.5 pF   2.5 → 2.5 pF
.75 → 0.75 pF   33 → 33 pF
1 → 1 pF   82 → 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.


Multiplier (1 - 5)
Numerical Value

Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

* Letters I and O are not used.

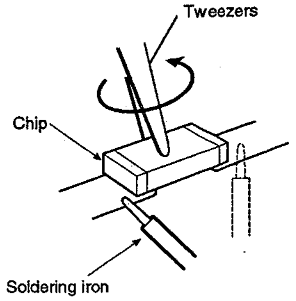
Example: A1 → $10 \times 10^1 = 100$ pF
N2 → $33 \times 10^2 = 3300$ pF
S3 → $47 \times 10^3 = 47000$ pF

5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip beyond 3 second.
9. Maintain temperature control under 260°C (500°F) when soldering.

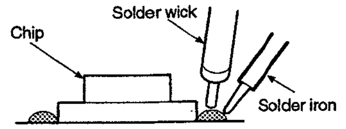
5-1 Removal (Transistor, Diode, Resistor and Capacitor)

1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the sokdering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning with tweezers.
   Note: Be careful not to damage other chips.

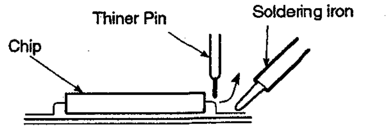

Tweezers
Chip
Soldering iron

5-2 Removal (IC)

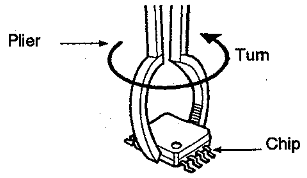
1. Add the solder wick and soldering iron to each lead of the IC and remove solder.


Solder wick
Chip
Solder iron

2. Add the soldering iron to each lead of the IC and left each lead of the IC using thiner pin.

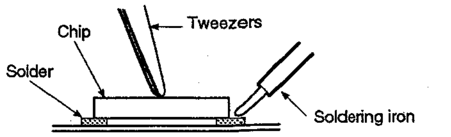

Thiner Pin
Soldering iron
Chip

3. Remove IC turning it with plier.

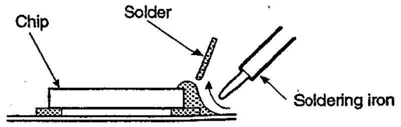

Plier
Turn
Chip

5-3 Mounting

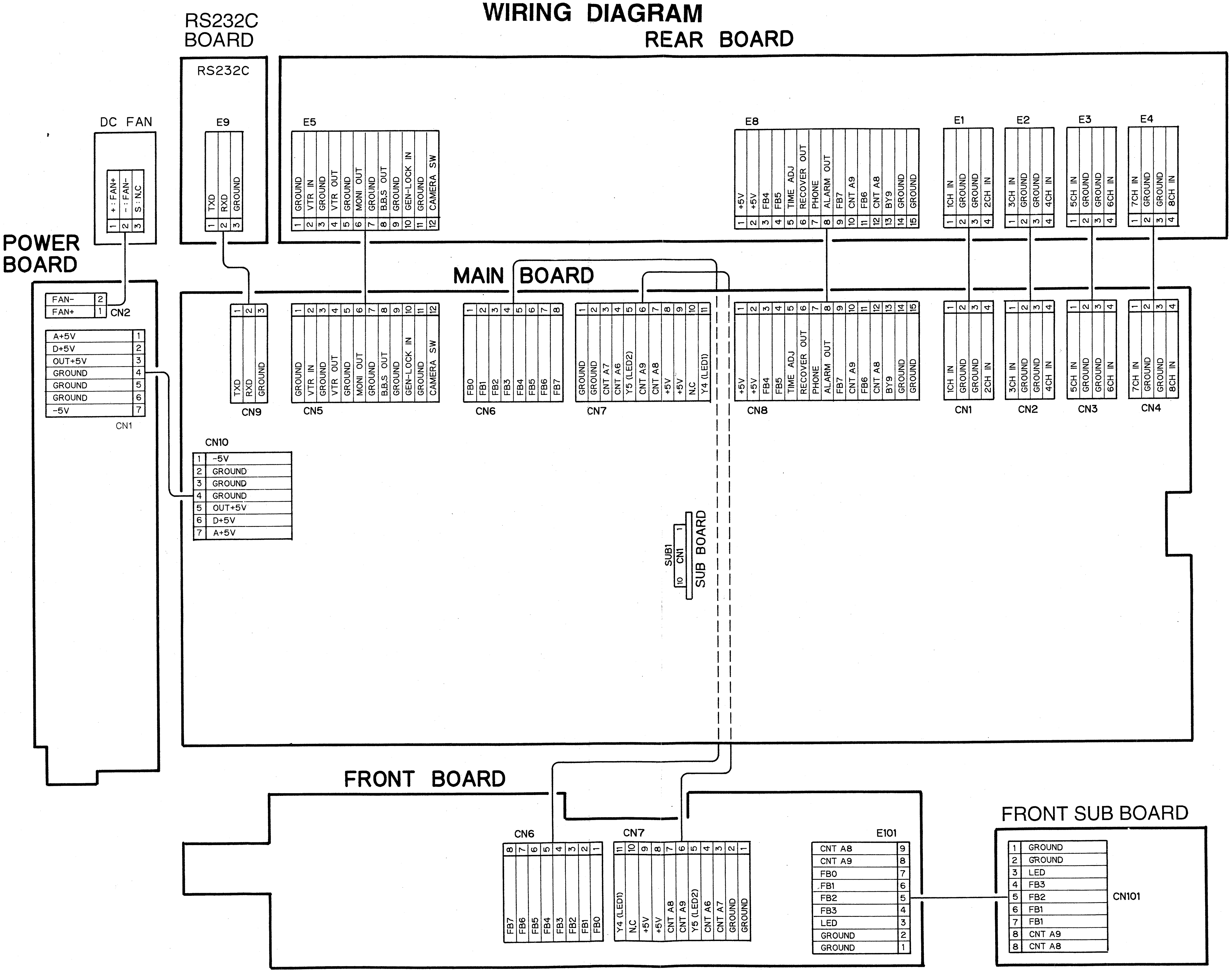
1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.


Chip
Tweezers
Solder
Soldering iron

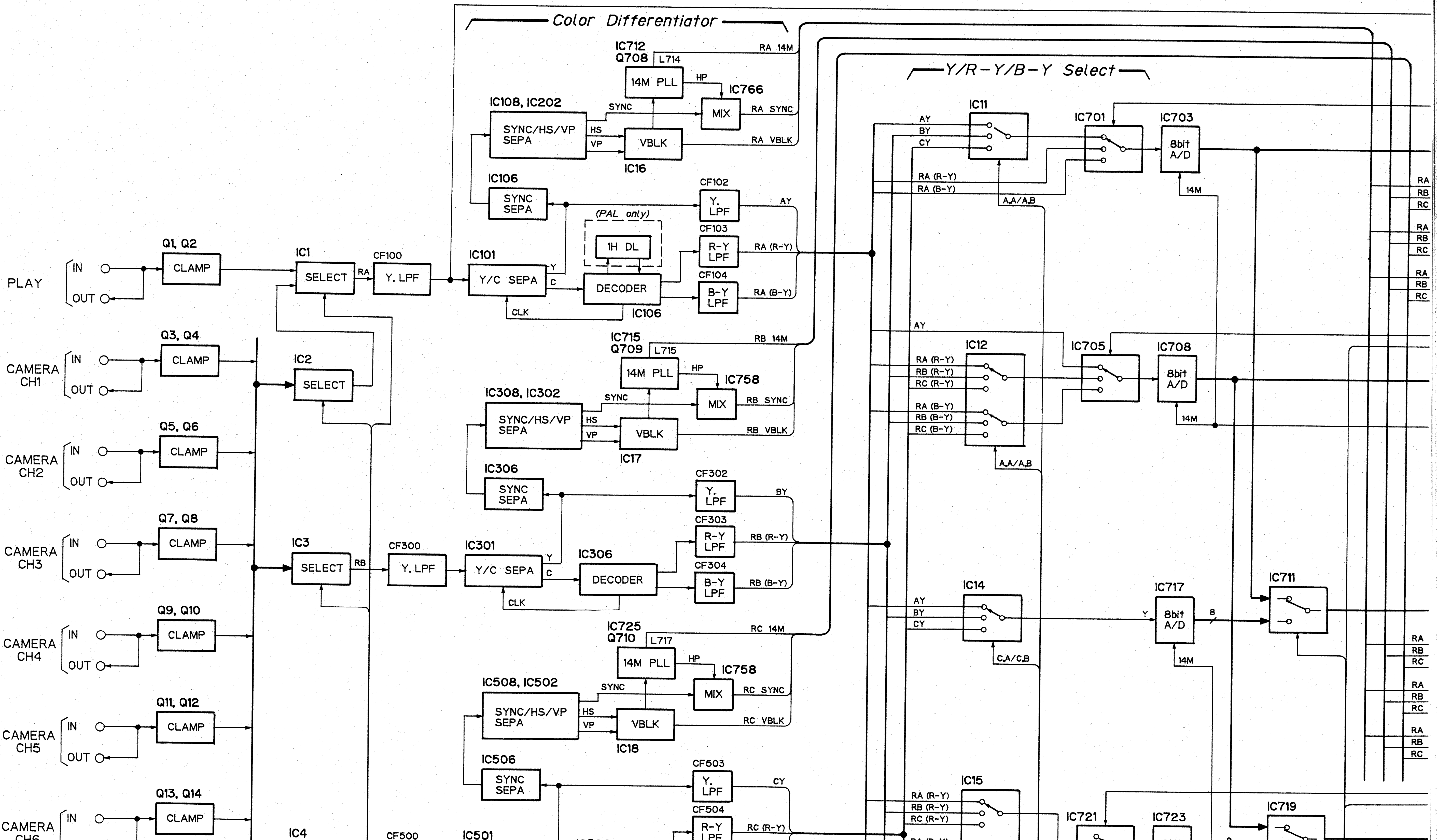
3. Solder both ends of chip (three leads for chip transistor).

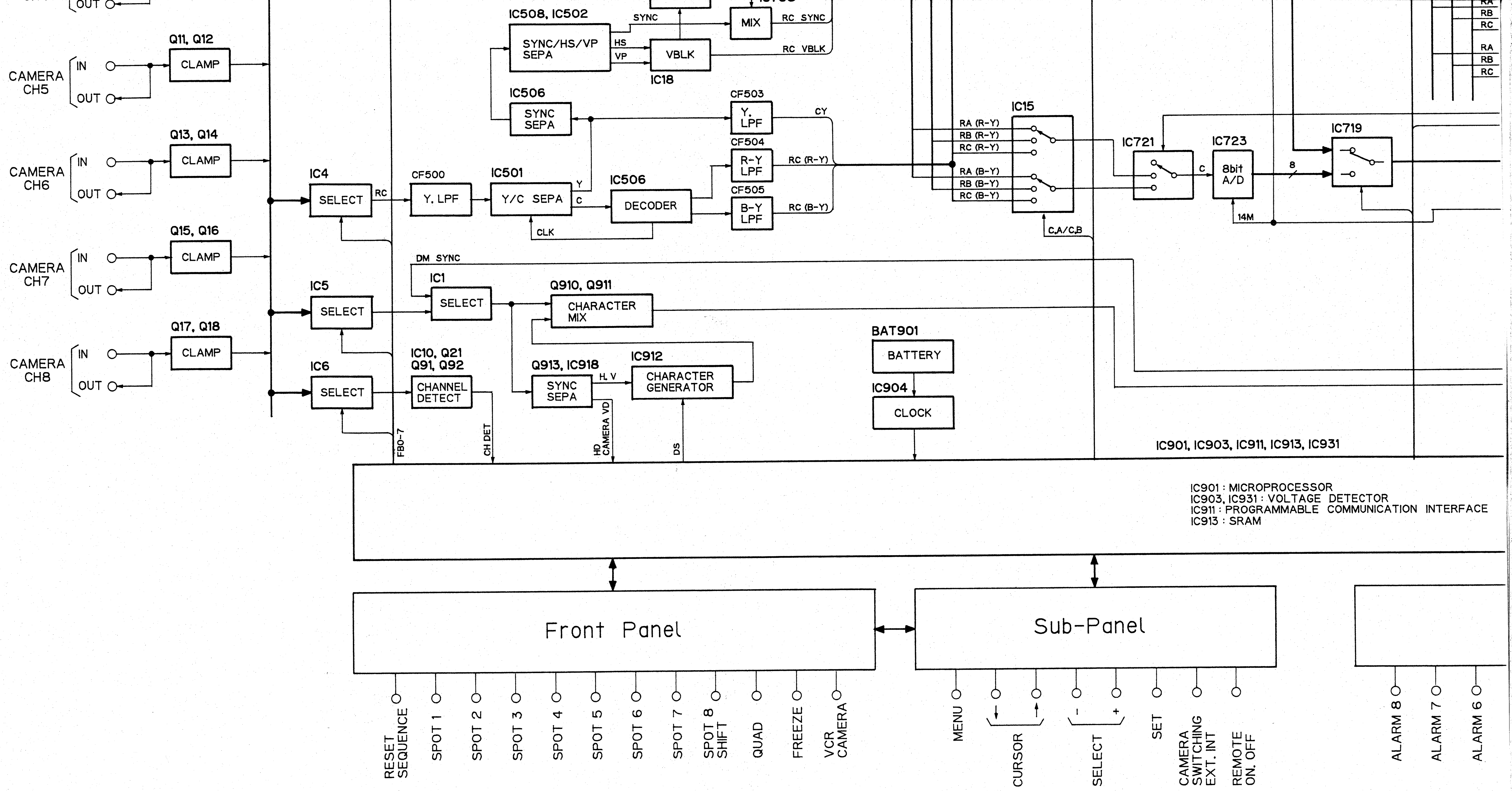

Chip
Solder
Soldering iron

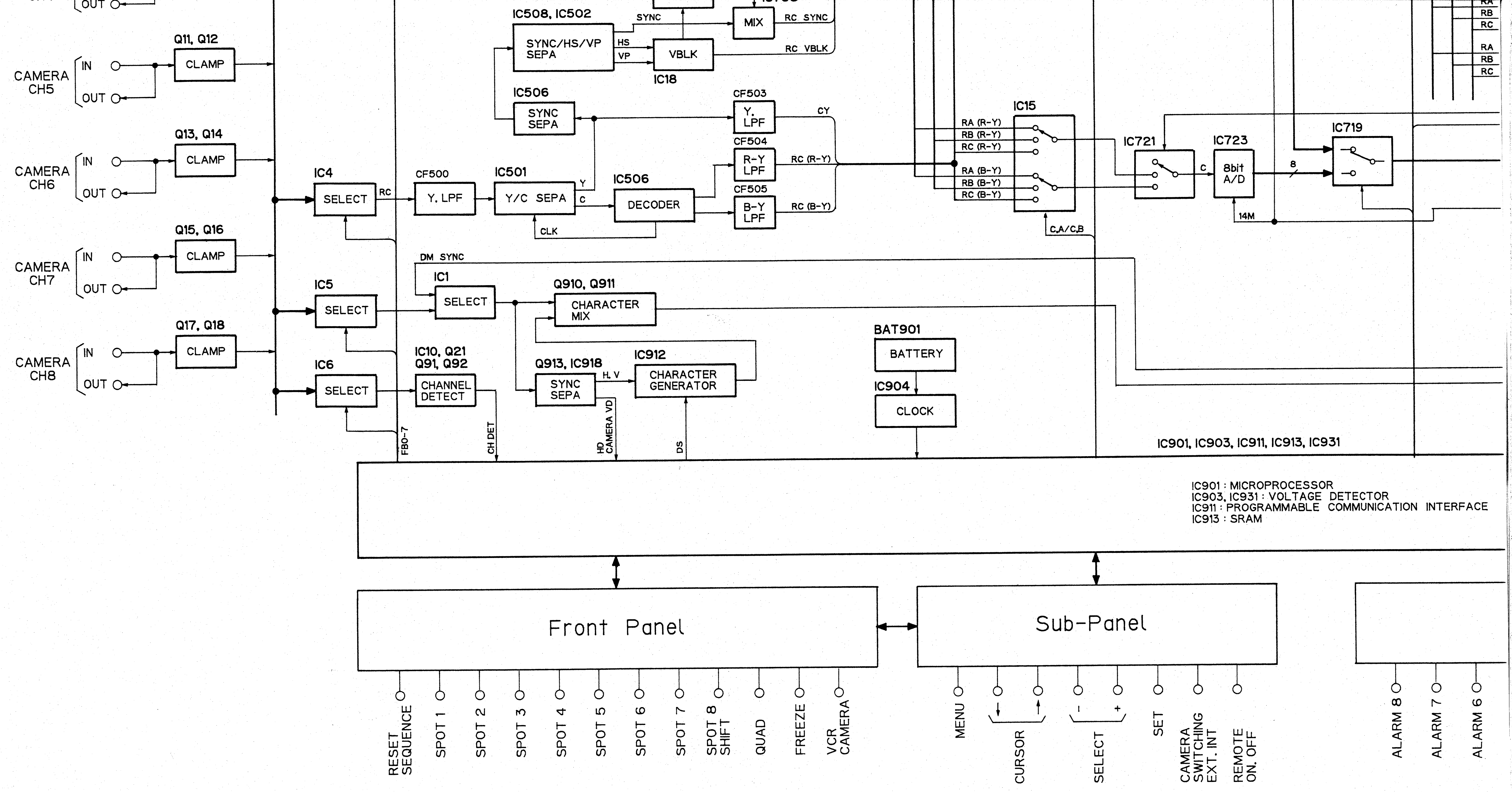
WIRING DIAGRAM

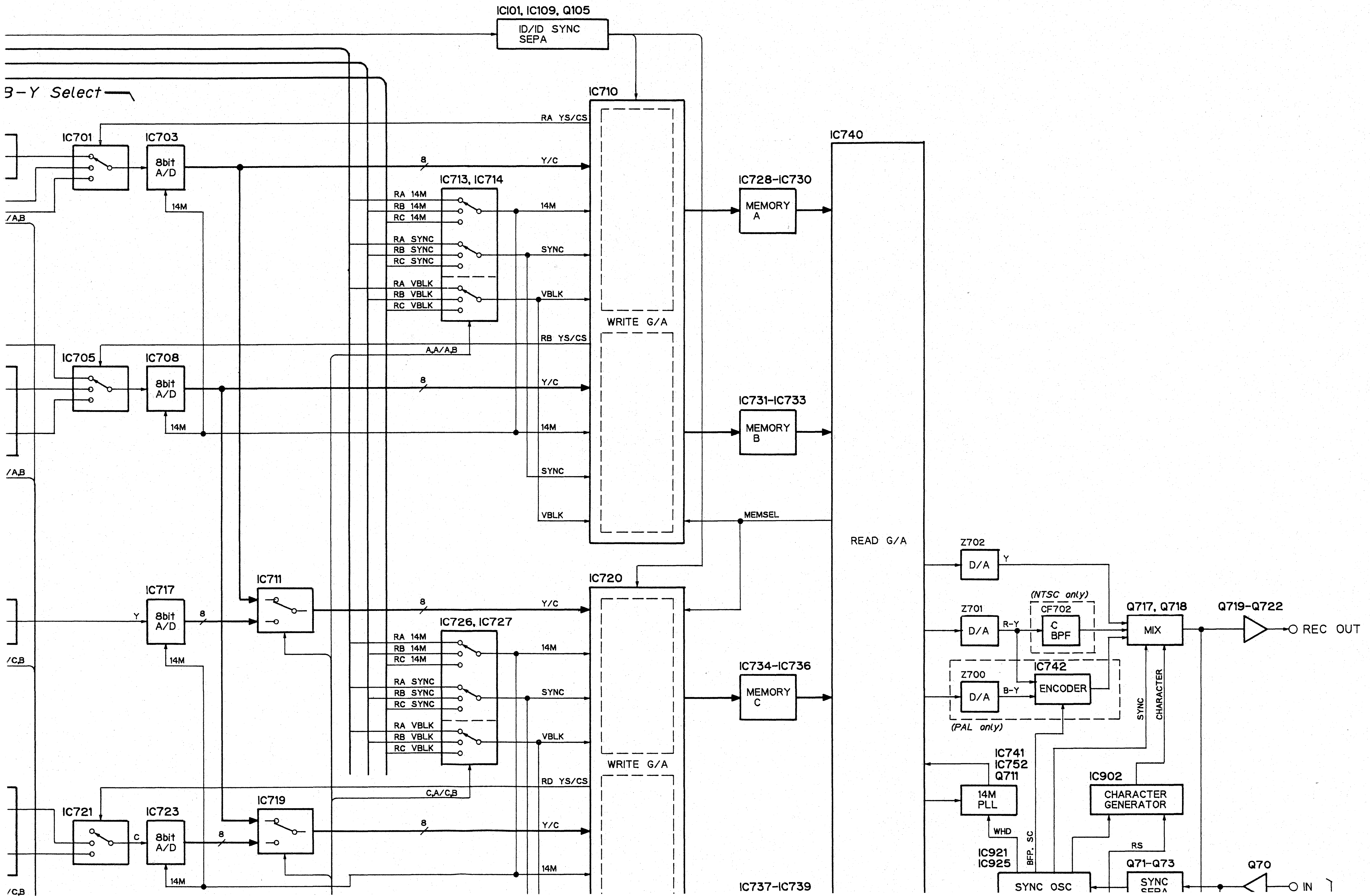

RS232C BOARD
RS232C
E9
1 TXD
2 RXD
3 GROUND
REAR BOARD
DC FAN
1 + : FAN+
2 - : FAN-
3 S : N.C
E5
1 GROUND
2 VTR IN
3 GROUND
4 VTR OUT
5 GROUND
6 MONI OUT
7 GROUND
8 B.B.S OUT
9 GROUND
10 GEN-LOCK IN
11 GROUND
12 CAMERA SW
E8
1 +5V
2 +5V
3 FB4
4 FB5
5 TIME ADJ
6 RECOVER OUT
7 PHONE
8 ALARM OUT
9 FB7
10 CNT A9
11 FB6
12 CNT A8
13 BY9
14 GROUND
15 GROUND
E1
1 1CH IN
2 GROUND
3 GROUND
4 2CH IN
E2
1 3CH IN
2 GROUND
3 GROUND
4 4CH IN
E3
1 5CH IN
2 GROUND
3 GROUND
4 6CH IN
E4
1 7CH IN
2 GROUND
3 GROUND
4 8CH IN
POWER BOARD
CN2
2 FAN-
1 FAN+
CN1
1 A+5V
2 D+5V
3 OUT+5V
4 GROUND
5 GROUND
6 GROUND
7 -5V
MAIN BOARD
CN9
1 TXD
2 RXD
3 GROUND
CN5
1 GROUND
2 VTR IN
3 GROUND
4 VTR OUT
5 GROUND
6 MONI OUT
7 GROUND
8 B.B.S OUT
9 GROUND
10 GEN-LOCK IN
11 GROUND
12 CAMERA SW
CN6
1 FB0
2 FB1
3 FB2
4 FB3
5 FB4
6 FB5
7 FB6
8 FB7
CN7
1 GROUND
2 GROUND
3 CNT A7
4 CNT A6
5 Y5 (LED2)
6 CNT A9
7 CNT A8
8 +5V
9 +5V
10 N.C
11 Y4 (LED1)
CN8
1 +5V
2 +5V
3 FB4
4 FB5
5 TIME ADJ
6 RECOVER OUT
7 PHONE
8 ALARM OUT
9 FB7
10 CNT A9
11 FB6
12 CNT A8
13 BY9
14 GROUND
15 GROUND
CN1
1 1CH IN
2 GROUND
3 GROUND
4 2CH IN
CN2
1 3CH IN
2 GROUND
3 GROUND
4 4CH IN
CN3
1 5CH IN
2 GROUND
3 GROUND
4 6CH IN
CN4
1 7CH IN
2 GROUND
3 GROUND
4 8CH IN
CN10
1 -5V
2 GROUND
3 GROUND
4 GROUND
5 OUT+5V
6 D+5V
7 A+5V
SUB1
CN1
1
10
SUB BOARD
FRONT BOARD
CN6
8 FB7
7 FB6
6 FB5
5 FB4
4 FB3
3 FB2
2 FB1
1 FB0
CN7
11 Y4 (LED1)
10 N.C
9 +5V
8 +5V
7 CNT A8
6 CNT A9
5 Y5 (LED2)
4 CNT A6
3 CNT A7
2 GROUND
1 GROUND
E101
9 CNT A8
8 CNT A9
7 FB0
6 FB1
5 FB2
4 FB3
3 LED
2 GROUND
1 GROUND
FRONT SUB BOARD
CN101
1 GROUND
2 GROUND
3 LED
4 FB3
5 FB2
6 FB1
7 FB1
8 CNT A9
8 CNT A8

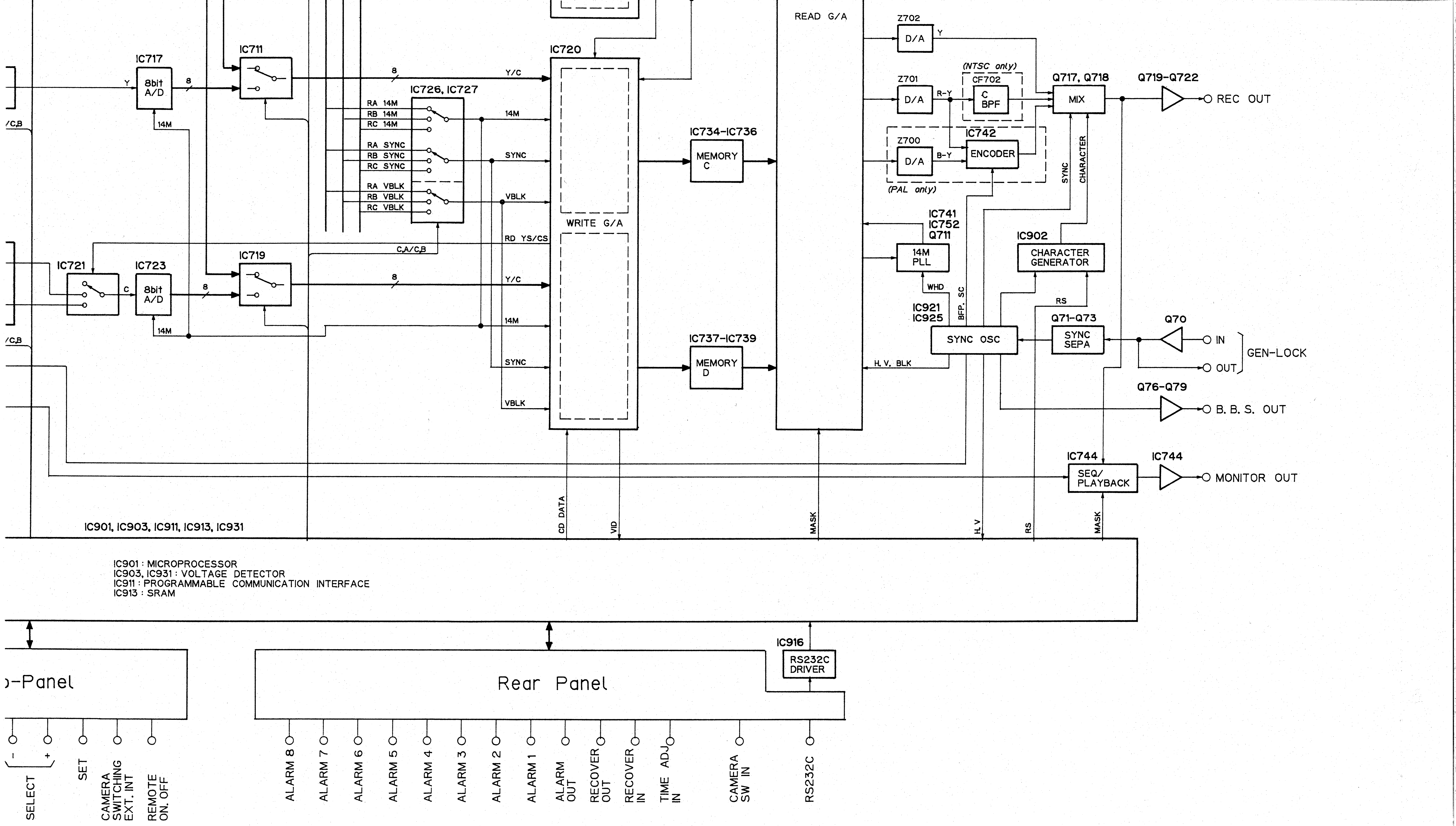
BLOCK DIAGRAM OF MAIN BOAR

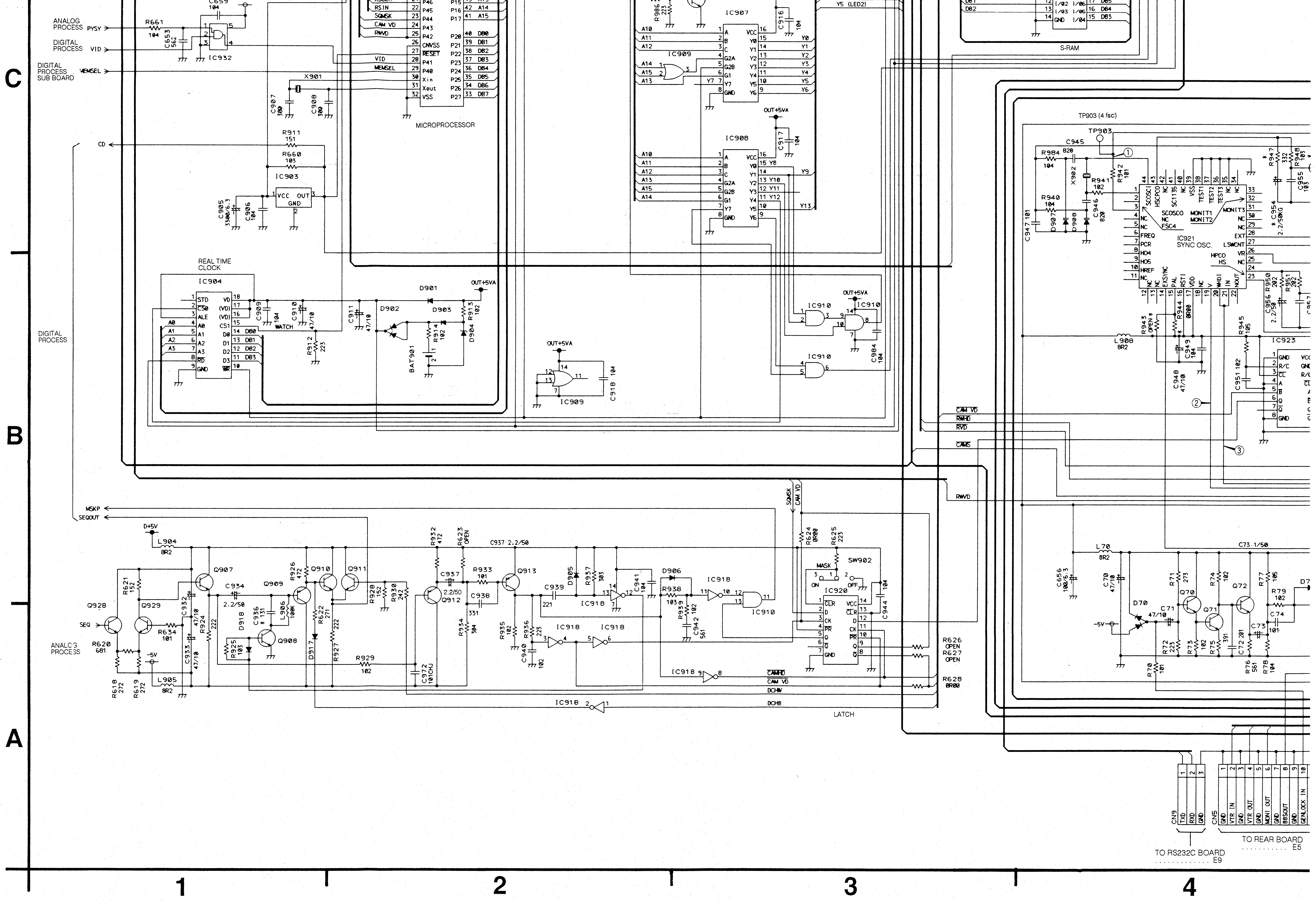

Color Differentiator
Y/R−Y/B−Y Select
PLAY
IN
OUT
Q1, Q2
CLAMP
CAMERA CH1
Q3, Q4
CAMERA CH2
Q5, Q6
CAMERA CH3
Q7, Q8
CAMERA CH4
Q9, Q10
CAMERA CH5
Q11, Q12
CAMERA CH6
Q13, Q14
IC1
SELECT
RA
CF100
Y. LPF
IC2
IC3
RB
CF300
IC4
CF500
IC101
Y/C SEPA
Y
C
CLK
(PAL only)
1H DL
DECODER
IC106
IC108, IC202
SYNC/HS/VP SEPA
HS
VP
SYNC
VBLK
IC16
IC712
Q708
L714
14M PLL
HP
IC766
MIX
RA 14M
RA SYNC
RA VBLK
SYNC SEPA
CF102
Y. LPF
AY
CF103
R−Y LPF
RA (R−Y)
CF104
B−Y LPF
RA (B−Y)
IC715
Q709
L715
RB 14M
IC758
IC308, IC302
IC17
RB SYNC
RB VBLK
IC306
CF302
BY
CF303
RB (R−Y)
CF304
RB (B−Y)
IC301
IC725
Q710
L717
RC 14M
IC508, IC502
IC18
RC SYNC
RC VBLK
IC506
CF503
CY
CF504
RC (R−Y)
IC501
IC11
AY
BY
CY
RA (R−Y)
RA (B−Y)
A,A/A,B
IC701
IC703
8bit A/D
14M
RA
RB
RC
IC12
RA (R−Y)
RB (R−Y)
RC (R−Y)
RA (B−Y)
RB (B−Y)
RC (B−Y)
IC705
IC708
IC14
C,A/C,B
IC717
8
IC711
IC15
IC721
IC723
IC719


OUT
Q11, Q12
CAMERA
CH5
IN
OUT
CLAMP
Q13, Q14
CAMERA
CH6
IN
OUT
CLAMP
Q15, Q16
CAMERA
CH7
IN
OUT
CLAMP
Q17, Q18
CAMERA
CH8
IN
OUT
CLAMP
IC4
SELECT
RC
IC5
SELECT
IC6
SELECT
IC508, IC502
SYNC/HS/VP
SEPA
HS
VP
SYNC
VBLK
IC18
MIX
RC SYNC
RC VBLK
IC506
SYNC
SEPA
CF503
Y.
LPF
CY
CF500
Y. LPF
IC501
Y/C SEPA
Y
C
CLK
IC506
DECODER
CF504
R-Y
LPF
RC (R-Y)
CF505
B-Y
LPF
RC (B-Y)
IC15
RA (R-Y)
RB (R-Y)
RC (R-Y)
RA (B-Y)
RB (B-Y)
RC (B-Y)
C,A/C,B
IC721
C
IC723
8bit
A/D
8
14M
IC719
RA
RB
RC
RA
RB
RC
DM SYNC
IC1
SELECT
Q910, Q911
CHARACTER
MIX
IC10, Q21
Q91, Q92
CHANNEL
DETECT
Q913, IC918
SYNC
SEPA
H, V
IC912
CHARACTER
GENERATOR
BAT901
BATTERY
IC904
CLOCK
FBO-7
CH DET
HD
CAMERA VD
DS
IC901, IC903, IC911, IC913, IC931
IC901 : MICROPROCESSOR
IC903, IC931 : VOLTAGE DETECTOR
IC911 : PROGRAMMABLE COMMUNICATION INTERFACE
IC913 : SRAM
Front Panel
RESET
SEQUENCE
SPOT 1
SPOT 2
SPOT 3
SPOT 4
SPOT 5
SPOT 6
SPOT 7
SPOT 8
SHIFT
QUAD
FREEZE
VCR
CAMERA
Sub-Panel
MENU
↓
↑
CURSOR
-
+
SELECT
SET
CAMERA
SWITCHING
EXT. INT
REMOTE
ON. OFF
ALARM 8
ALARM 7
ALARM 6


OUT
Q11, Q12
CAMERA CH5
IN
OUT
CLAMP
Q13, Q14
CAMERA CH6
IN
OUT
CLAMP
Q15, Q16
CAMERA CH7
IN
OUT
CLAMP
Q17, Q18
CAMERA CH8
IN
OUT
CLAMP
IC4
SELECT
RC
IC5
SELECT
IC6
SELECT
CF500
Y. LPF
IC501
Y/C SEPA
Y
C
CLK
IC506
DECODER
IC508, IC502
SYNC/HS/VP SEPA
HS
VP
SYNC
VBLK
IC18
MIX
RC SYNC
RC VBLK
IC506
SYNC SEPA
CF503
Y. LPF
CY
CF504
R-Y LPF
RC (R-Y)
CF505
B-Y LPF
RC (B-Y)
IC15
RA (R-Y)
RB (R-Y)
RC (R-Y)
RA (B-Y)
RB (B-Y)
RC (B-Y)
C,A/C,B
IC721
C
IC723
8bit A/D
8
14M
IC719
RA
RB
RC
RA
RB
RC
DM SYNC
IC1
SELECT
Q910, Q911
CHARACTER MIX
IC10, Q21
Q91, Q92
CHANNEL DETECT
Q913, IC918
SYNC SEPA
H, V
IC912
CHARACTER GENERATOR
BAT901
BATTERY
IC904
CLOCK
FB0-7
CH DET
HD
CAMERA VD
DS
IC901, IC903, IC911, IC913, IC931
IC901 : MICROPROCESSOR
IC903, IC931 : VOLTAGE DETECTOR
IC911 : PROGRAMMABLE COMMUNICATION INTERFACE
IC913 : SRAM
Front Panel
RESET SEQUENCE
SPOT 1
SPOT 2
SPOT 3
SPOT 4
SPOT 5
SPOT 6
SPOT 7
SPOT 8 SHIFT
QUAD
FREEZE
VCR CAMERA
Sub-Panel
MENU
↓
↑
CURSOR
-
+
SELECT
SET
CAMERA SWITCHING EXT. INT
REMOTE ON. OFF
ALARM 8
ALARM 7
ALARM 6

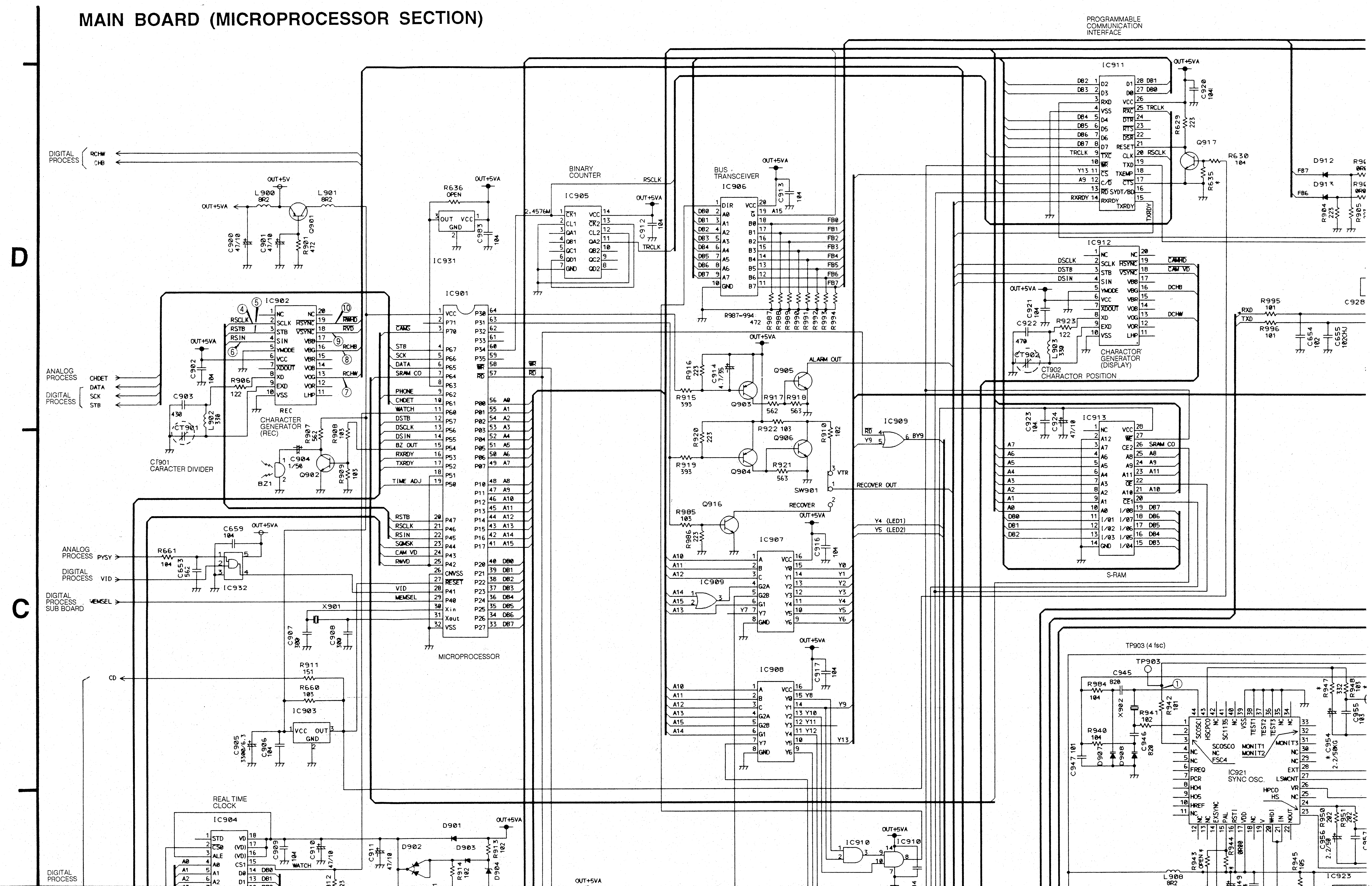

IC101, IC109, Q105
ID/ID SYNC SEPA
B-Y Select
IC710
RA YS/CS
IC701
IC703
8bit A/D
14M
8
Y/C
IC713, IC714
RA 14M
RB 14M
RC 14M
RA SYNC
RB SYNC
RC SYNC
RA VBLK
RB VBLK
RC VBLK
14M
SYNC
VBLK
WRITE G/A
RB YS/CS
A,A/A,B
IC705
IC708
8bit A/D
14M
8
Y/C
14M
SYNC
VBLK
/A,B
IC740
IC728-IC730
MEMORY A
IC731-IC733
MEMORY B
MEMSEL
READ G/A
IC717
Y
8bit A/D
8
14M
IC711
IC720
8
Y/C
IC726, IC727
RA 14M
RB 14M
RC 14M
RA SYNC
RB SYNC
RC SYNC
RA VBLK
RB VBLK
RC VBLK
14M
SYNC
VBLK
WRITE G/A
RD YS/CS
C,A/C,B
IC734-IC736
MEMORY C
/C,B
IC721
C
IC723
8bit A/D
8
14M
IC719
8
Y/C
14M
IC737-IC739
Z702
D/A
Y
Z701
D/A
R-Y
(NTSC only)
CF702
C BPF
Q717, Q718
MIX
Q719-Q722
REC OUT
Z700
D/A
B-Y
IC742
ENCODER
(PAL only)
SYNC
CHARACTER
IC741
IC752
Q711
14M PLL
WHD
IC902
CHARACTER GENERATOR
IC921
IC925
BFP, SC
RS
SYNC OSC
Q71-Q73
SYNC SEPA
Q70
IN

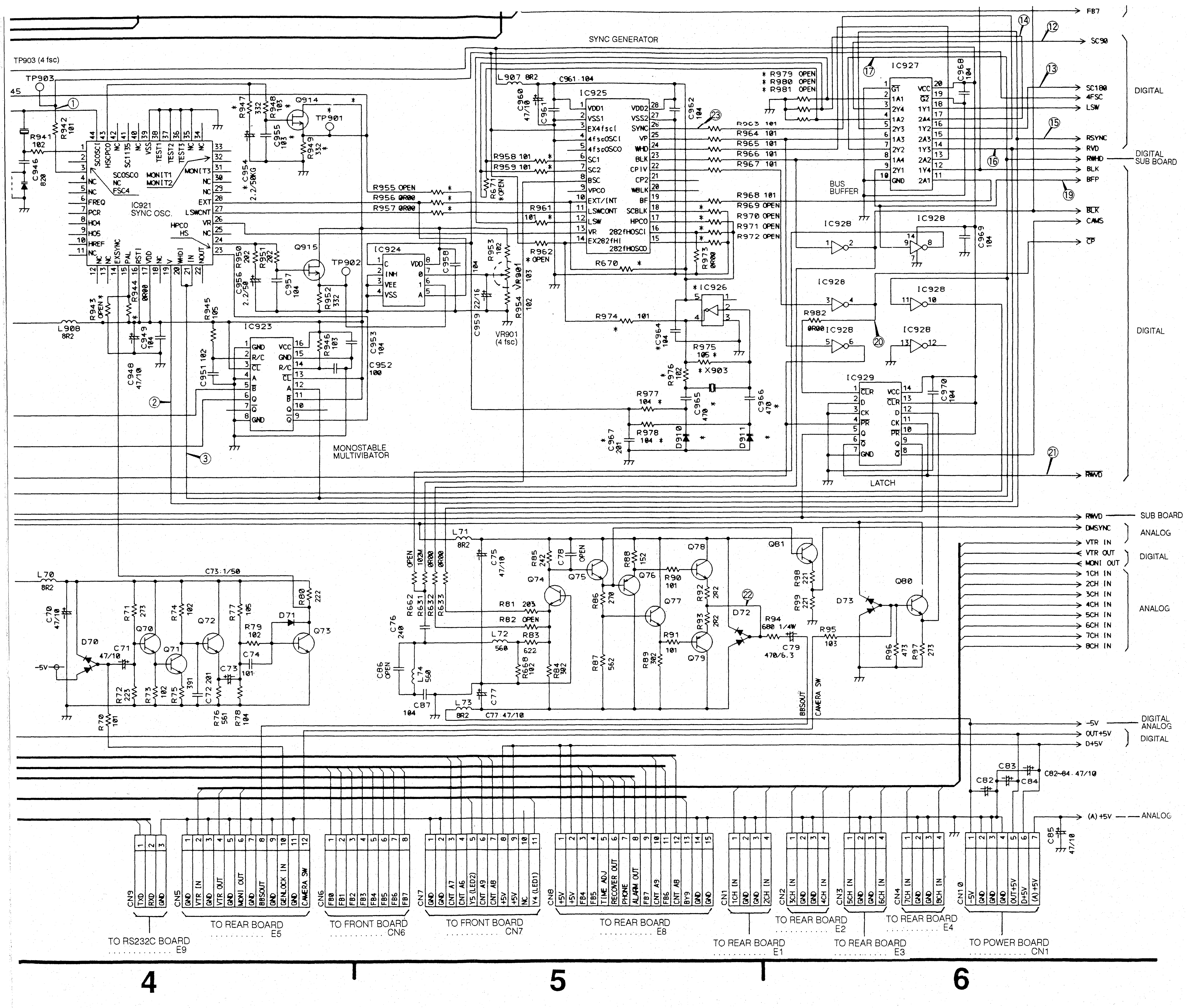

READ G/A
Z702
D/A
Y
IC711
IC720
IC717
8bit A/D
8
Y/C
(NTSC only)
CF702
C BPF
Z701
D/A
R-Y
Q717, Q718
MIX
Q719-Q722
REC OUT
IC726, IC727
RA 14M
RB 14M
RC 14M
14M
RA SYNC
RB SYNC
RC SYNC
SYNC
RA VBLK
RB VBLK
RC VBLK
VBLK
IC734-IC736
MEMORY C
Z700
D/A
B-Y
IC742
ENCODER
(PAL only)
SYNC
CHARACTER
WRITE G/A
RD YS/CS
C,A/C,B
IC741 IC752 Q711
14M PLL
IC902
CHARACTER GENERATOR
IC721
C
IC723
8bit A/D
IC719
WHD
BFP, SC
RS
IC921 IC925
SYNC OSC
Q71-Q73
SYNC SEPA
Q70
IN
OUT
GEN-LOCK
IC737-IC739
MEMORY D
H, V, BLK
Q76-Q79
B. B. S. OUT
IC744
SEQ/ PLAYBACK
IC744
MONITOR OUT
/C,B
/C,B
IC901, IC903, IC911, IC913, IC931
CD DATA
VID
MASK
H, V
RS
MASK
IC901 : MICROPROCESSOR
IC903, IC931 : VOLTAGE DETECTOR
IC911 : PROGRAMMABLE COMMUNICATION INTERFACE
IC913 : SRAM
IC916
RS232C DRIVER
-Panel
Rear Panel
- +
SELECT
SET
CAMERA SWITCHING EXT. INT
REMOTE ON. OFF
ALARM 8
ALARM 7
ALARM 6
ALARM 5
ALARM 4
ALARM 3
ALARM 2
ALARM 1
ALARM OUT
RECOVER OUT
RECOVER IN
TIME ADJ IN
CAMERA SW IN
RS232C


A
B
C
1
2
3
4
ANALOG PROCESS PSYV
DIGITAL PROCESS VID
DIGITAL PROCESS SUB BOARD MEMSEL
IC932
X901
MICROPROCESSOR
CD
IC903
REAL TIME CLOCK
IC904
WATCH
BAT901
DIGITAL PROCESS
IC909
IC907
IC908
IC910
OUT+5VA
S-RAM
Y5 (LED2)
TP903 (4 fsc)
TP903
IC921
SYNC OSC.
IC923
CAM VD
RWHD
RVD
CAMS
RWVD
MSKP
SEQOUT
D+5V
SEQ
ANALOG PROCESS
Q928
Q929
Q907
Q908
Q909
Q910
Q911
Q912
Q913
IC918
IC920
SW902
MASK
SQMSK
CAM VD
CAMHD
DCHW
DCHB
LATCH
R626 OPEN
R627 OPEN
R628 0R00
Q70
Q71
Q72
D70
-5V
L70
C73 1/50
CN9
TXD
RXD
GND
CN5
GND
VTR IN
GND
VTR OUT
GND
MONI OUT
GND
BBSOUT
GND
GENLOCK IN
TO RS232C BOARD E9
TO REAR BOARD E5

SCHEMATIC DIAGRAM OF MAIN BOARD (MICROPI

MAIN BOARD (MICROPROCESSOR SECTION)


D
C
DIGITAL PROCESS RCHW CHB
ANALOG PROCESS CHDET
DIGITAL PROCESS DATA SCK STB
ANALOG PROCESS PYSY
DIGITAL PROCESS VID
DIGITAL PROCESS SUB BOARD MEMSEL
CD
DIGITAL PROCESS
Q901
L900 8R2
L901 8R2
IC931
IC902
CHARACTER GENERATOR (REC)
REC
CT901 CARACTER DIVIDER
BZ1
Q902
IC932
IC903
X901
IC904 REAL TIME CLOCK
IC901 MICROPROCESSOR
IC905 BINARY COUNTER
2.4576M
RSCLK
TRCLK
IC906 BUS TRANSCEIVER
R987~994 472
Q903
Q904
Q905
Q906
Q916
ALARM OUT
RECOVER OUT
RECOVER
SW901
VTR
Y4 (LED1)
Y5 (LED2)
IC907
IC908
IC909
IC910
IC911 PROGRAMMABLE COMMUNICATION INTERFACE
Q917
D912
D913
IC912 CHARACTOR GENERATOR (DISPLAY)
CT902 CHARACTOR POSITION
IC913 S-RAM
TP903 (4 fsc)
X902
IC921 SYNC OSC.
IC923
L908 8R2
OUT+5VA
OUT+5V


SYNC GENERATOR
TP903 (4 fsc)
TP903
TP901
TP902
IC921
SYNC OSC.
IC923
MONOSTABLE MULTIVIBATOR
IC924
IC925
IC926
IC927
BUS BUFFER
IC928
IC929
LATCH
VR901 (4 fsc)
X903
Q914
Q915
Q70
Q71
Q72
Q73
Q74
Q75
Q76
Q77
Q78
Q79
Q80
Q81
D70
D71
D72
D73
D910
D911
FB7
SC90
SC180
4FSC
LSW
RSYNC
RVD
RWHD
BLK
BFP
BLK
CAMS
CP
RWD
DMSYNC
VTR IN
VTR OUT
MONI OUT
1CH IN
2CH IN
3CH IN
4CH IN
5CH IN
6CH IN
7CH IN
8CH IN
BBSOUT
CAMERA SW
-5V
OUT+5V
D+5V
(A) +5V
DIGITAL
DIGITAL SUB BOARD
SUB BOARD
ANALOG
DIGITAL ANALOG
C82~84 47/10
CN9
TXD
RXD
GND
CN5
GND
VTR IN
GND
VTR OUT
GND
MONI OUT
GND
BBSOUT
GND
GENLOCK IN
GND
CAMERA SW
CN6
FB0
FB1
FB2
FB3
FB4
FB5
FB6
FB7
CN7
GND
GND
CNT A7
CNT A6
YS (LED2)
CNT A9
CNT A8
+5V
+5V
NC
Y4 (LED1)
CN8
+5V
+5V
FB4
FB5
TIME ADJ
RECOVER OUT
PHONE
ALARM OUT
FB7
CNT A9
FB6
CNT A8
BY9
GND
GND
CN1
1CH IN
GND
GND
2CH IN
CN2
3CH IN
GND
GND
4CH IN
CN3
5CH IN
GND
GND
6CH IN
CN4
7CH IN
GND
GND
8CH IN
CN10
-5V
GND
GND
GND
OUT+5V
D+5V
(A) +5V
TO RS232C BOARD
E9
TO REAR BOARD
E5
TO FRONT BOARD
CN6
TO FRONT BOARD
CN7
TO REAR BOARD
E8
TO REAR BOARD
E1
TO REAR BOARD
E2
TO REAR BOARD
E3
TO REAR BOARD
E4
TO POWER BOARD
CN1
4
5
6

Q79	A5/B5
Q80	A6
Q81	A6
Q901	D1
Q902	C1
Q903	D3
Q904	C3
Q905	D3
Q906	C3
Q907	B1
Q908	A1
Q909	B1
Q910	B1/B2
Q911	B2
Q912	B2
Q913	B2
Q914	C4
Q915	B4
Q916	C3
Q917	D4
Q928	A1
Q929	A1
D70	A4
D71	B4
D72	A5/B5
D73	B6
D901	B1
D902	B2
D903	B2
D904	B2
D905	B2
D906	B2/B3
D907	C4
D908	C4
D910	B5
D911	B5
D917	A1

Note: The value indicated in the schematic diagram should be read as follows:

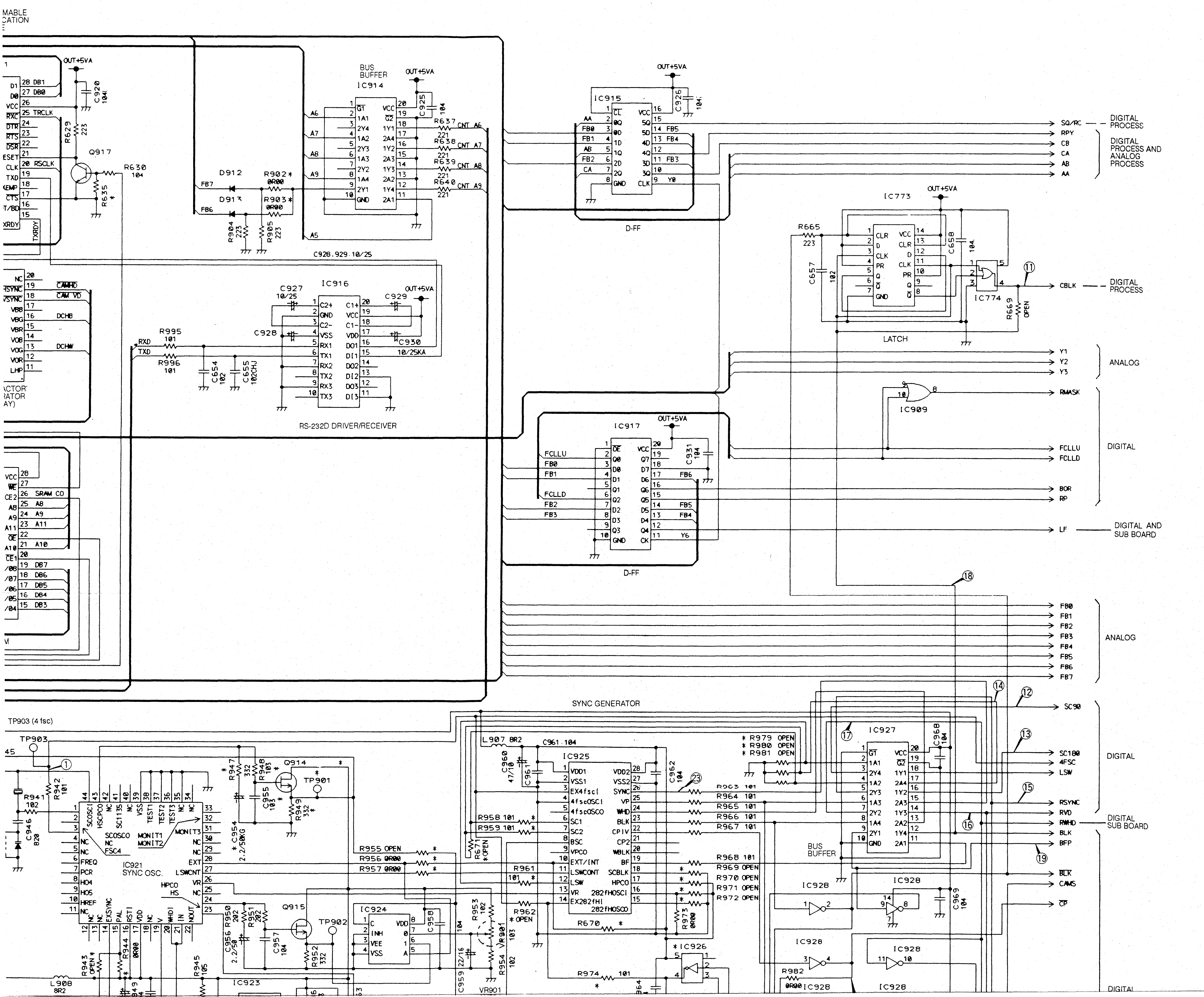
□ □ □
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:
330 → 33×10^0 = 33 Ω
561 → 56×10^1 = 560 Ω
123 → 12×10^3 = 12k Ω
0R00 = 0 Ω

For Capacitor:
820 → 82×10^0 = 82 pF
102 → 10×10^2 = 1000 pF = 0.001 μF
104 → 10×10^4 = 100000 pF = 0.1 μF
The suffix attached to capacitance indicates

N BOARD (MICROPROCESSOR SECTION)


BUS BUFFER
IC914
OUT+5VA
IC915
D-FF
IC916
RS-232D DRIVER/RECEIVER
C928.929 10/25
IC917
IC773
LATCH
IC774
IC909
IC925
IC927
IC921
SYNC OSC.
IC924
IC926
IC928
IC923
Q914
Q915
Q917
TP901
TP902
TP903
TP903 (4 fsc)
SYNC GENERATOR
SQ/RC
RPY
CB
CA
AB
AA
DIGITAL PROCESS
DIGITAL PROCESS AND ANALOG PROCESS
CBLK
Y1
Y2
Y3
ANALOG
RMASK
FCLLU
FCLLD
BOR
RP
DIGITAL
LF
DIGITAL AND SUB BOARD
FB0
FB1
FB2
FB3
FB4
FB5
FB6
FB7
SC90
SC180
4FSC
LSW
RSYNC
RVD
RWHD
BLK
BFP
DIGITAL SUB BOARD
CAMS
CP
RXD
TXD
D912
D913
VR901
L907 8R2
L908 8R2
C961 104
* R979 OPEN
* R980 OPEN
* R981 OPEN

< Index >
Main Board
(Microprocessor Section)

IC773	D6
IC774	D6
IC901	C1/D1
IC902	D1
IC903	C1
IC904	B1
IC905	D2
IC906	D3
IC907	C3
IC908	C3
IC909	B2,C2,C3 D3,D6
IC910	B3
IC911	D4
IC912	D4
IC913	C4/D4
IC914	D5
IC915	D4/D5
IC916	D5
IC917	C5/D5
IC918	A2-3/B2-3
IC920	A3/B3
IC921	B4/C4
IC923	B4
IC924	B5
IC925	B5/C5
IC926	B5
IC927	C6
IC928	B6
IC929	B6
IC931	D2
IC932	C1
Q70	A4/B4
Q71	A4
Q72	A4/B4
Q73	A4/B4
Q74	B5
Q75	B5
Q76	B5
Q77	B5
Q78	B5
Q79	A5/B5
Q80	A6
Q81	A6
Q901	D1
Q902	C1
Q903	D3
Q904	C3
Q905	D3
Q906	C3
Q907	B1
Q908	A1
Q909	B1
Q910	B1/B2
Q911	B2
Q912	B2
Q913	B2
Q914	C4
Q915	B4
Q916	C3
Q917	D4

REF. NO.	NTSC	PAL
IC925	MN676011NPS	MN676021PPS
IC926	Open	YWSC7S04F
Q914	Open	2SK209
D910	Open	MA372
D911	Open	MA372
R670	0 Ω	Open
R671	0 Ω	Open
R903	Open	0 Ω
R943	0 Ω	Open
R944	Open	0 Ω
R947	Open	3.3k Ω
R948	Open	10k Ω
R949	Open	3.3k Ω
R955	0 Ω	Open
R956	Open	0 Ω
R957	Open	0 Ω
R958	Open	100 Ω
R962	0 Ω	Open
R969	0 Ω	Open
R970	0 Ω	Open
R971	0 Ω	Open
R972	0 Ω	Open
R973	Open	0 Ω
R974	Open	100 Ω
R975	Open	1M Ω
R976	Open	1k Ω
R977	Open	100k Ω
R978	Open	100k Ω
C936	200 pF	130 pF
C954	Open	2.2 µF 50V
C955	Open	0.01 µF
C964	Open	0.1 µF
C965	Open	47 pF
C966	Open	47 pF
C967	Open	200 pF
X902	YFMS30914M10	YFMS30917M10
X903	Open	YWN8R4R40625
TP901	Open	RCT2125TPV

MAIN BOARD

	IC773	IC774	IC902	IC903	IC904	IC905	IC906	IC907	IC908	IC909	IC910	IC912	IC914
Pin 1	3.8	1.3	1.2	5.1	1.3	2.4	5.1	0.1	0.1	0.1	5.1	1.8	0
2	5.1	0.4	5.1	0	5.1	0	1.0	0.1	0.1	4.8	5.1	0	0.3
3	1.3	0	0	5.1	4.7	2.5	1.0	0.1	0.1	1.8	5.1	0	0
4	5.1	1.3	5.1		2.4	2.5	1.0	4.8	4.7	2.9	5.1	5.1	4.9
5	4.7	5.1	0		2.0	2.5	1.0	5.1	4.8	5.1	5.1	0	0
6	0.4		5.1		2.2	2.5	1.0	4.7	0.1	5.1	5.1	5.1	4.7
7	0		1.0		2.9	0	1.0	5.1	5.1	0	0	1.1	0
8	0.4		2.3		2.9	2.5	1.0	0	0	5.1	5.1	1.9	0.1
9	4.6		2.4		0	2.5	0.6	5.1	5.1	5.1	5.1	2.0	0.9
10	5.1		0		5.1	2.5	0	5.1	5.1	5.1	5.1	0	0
11	1.3		0		1.0	2.5	1.5	5.1	5.1	0	0	0	1.0
12	4.7		0		1.0	0	1.6	5.1	5.1	0	4.4	0	0.1
13	3.8		0		1.0	2.5	0	5.1	5.1	0	0	0	0
14	5.1		0		1.2	5.1	0	5.1	5.1	5.1	5.1	0	4.7
15			0		0		0	5.1	5.1			0	0
16			0		4.8		0	5.1	5.1			0	4.9
17			0		4.7		0					0	0
18			5.1		4.7		0					0	0.3
19			4.3				4.8					0	0
20			1.1				5.1					1.5	5.1

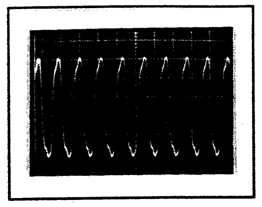
	IC915	IC916	IC917	IC918	IC920	IC923	IC924	IC926	IC927	IC928	IC929	IC931	IC932
Pin 1	5.0	4.9	0	0	5.1	0	2.2	1.3	0	13	5.1	5.1	0.1
2	0	0	5.1	5.1	5.1	4.6	0	2.5	2.6	3.8	0	0	0
3	0	-5.2	0	5.0	5.1	5.1	0	0	2.5	0.1	0	5.0	0
4	0	-10.1	0	0	5.1	0	0	2.5	2.2	5.1	5.1		0
5	0	0	5.1	0	0	0	0	5.1	4.7	0	0.4		5.1
6	0	10.1	5.1	5.1	5.1	0	0.5		0	5.1	4.8		
7	0	0	0	0	0	5.1	2.2		0.8	0	0		
8	0	-10.1	0	0	5.1	0	5.1		1.3	5.0	5.1		
9	5.1	0	5.1	5.0	5.1	5.1			0.2	0.2	0		
10	0	10.1	0	0	0	0			0	4.3	5.1		
11	0	0	5.1	5.0	0	5.1			0.25	0.8	4.8		
12	5.1	5.1	5.1	0	0	0.8			1.0	5.1	0		
13	0	0	0	5.1	0	5.1			0.8	0	5.1		
14	0	5.1	0	5.1	5.1	4.8			0	5.1	5.1		
15	0	5.1	5.1			0			4.7				
16	5.1	5.1	5.1			5.1			2.5				
17		10.1	1.6						2.2				
18		2.5	0						2.6				
19		5.1	0						0				
20		7.5	5.1						5.1				

	IC911	IC913	IC925
Pin 1	1.1	1.0	5.1
2	1.0	0	0
3	5.1	4.9	2.4
4	0	0.3	0
5	1.0	1.0	5.1
6	0.8	4.1	2.1
7	0.8	2.8	2.1
8	0.8	2.2	0.10
9	2.5	2.0	0
10	5.1	2.4	0
11	5.1	1.2	0
12	1.0	1.2	2.6
13	2.9	1.1	5.1
14	0	0	2.5
15	5.1	1.0	5.1
16	1.3	1.0	0
17	0	1.0	0
18	5.1	0.9	4.3
19	5.1	0.6	0.2
20	2.4	5.1	3.4
21	0	0.1	0.2
22	1.3	2.9	0.1
23	0	0.1	1.3
24	0	0.1	0.8
25	2.5	4.7	0
26	5.1	5.1	4.7
27	1.2	5.1	0
28	1.2	4.7	5.1

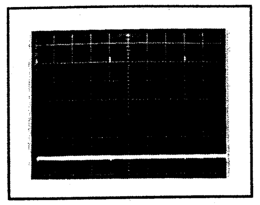
	IC921
Pin 1	2.7
2	0.8
3	2.4
4	0.9
5	0.9
6	3.0
7	0
8	2.0
9	5.1
10	3.4
11	0.9
12	1.2
13	1.2
14	5.1
15	5.1
16	5.1
17	5.1
18	0.8
19	0
20	0.8
21	0.8
22	0.8
23	5.1
24	0.2
25	1.2
26	5.1
27	0
28	0
29	1.3
30	1.0
31	5.1
32	0
33	5.1
34	1.2
35	0
36	0
37	0
38	0
39	0
40	1.3
41	5.1
42	1.2
43	1.3
44	2.6

	B	C	E
Q70	2.2	5.1	1.6
71	1.9	2.8	0.9
72	2.8	5.1	2.2
73	0.5	5.1	0
74	0	2.5	-0.6
75	2.5	5.1	1.9
76	1.9	-4.9	2.5
77	1.6	5.1	1.2
78	2.5	5.1	1.9
79	1.2	-4.9	1.8
80	0	5.1	0
81	1.9	5.1	1.2
901	4.4	5.1	5.1
902	0	5.1	0
903	5.1	0	5.1
904	4.4	0.8	5.1
905	0	1.1	0
906	0.8	0	0
907	3.1	5.1	2.5
908	0.1	0	0
909	0	-4.9	0.6
910	0.6	5.1	0
911	0	5.1	4.3
912	2.0	-4.9	2.6
913	4.9	0.5	5.1
914	(G)1.4	(D)5.1	(S)1.7
915	(G).05	(D)5.1	(S)0.5
916	0	-	0
917	0.6	0	0
928	0.2	5.1	-0.4
929	0	3.1	-0.6

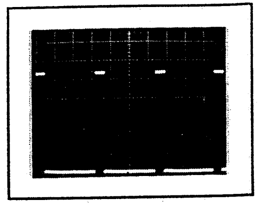
1. 50nsec/DIV 1V/DIV



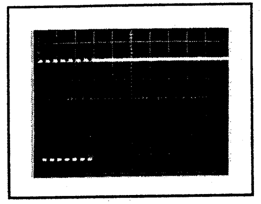
2. 5msec/DIV 1V/DIV



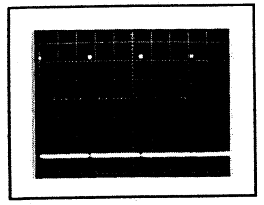
3. 20µsec/DIV 1V/DIV



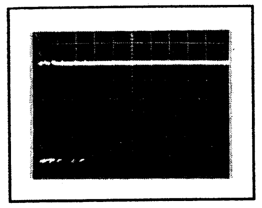
4. 2µsec/DIV 1V/DIV



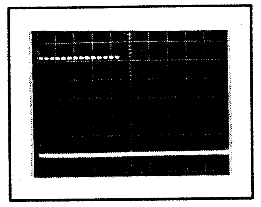
5. 50µsec/DIV 1V/DIV



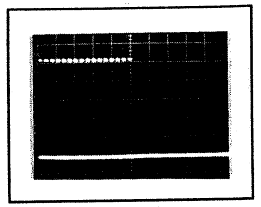
6. 1msec/DIV 1V/DIV



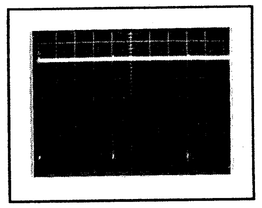
7. 0.2msec/DIV 1V/DIV



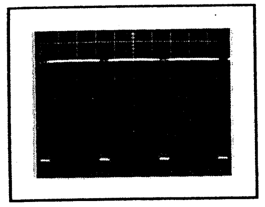
8. 0.2msec/DIV 1V/DIV



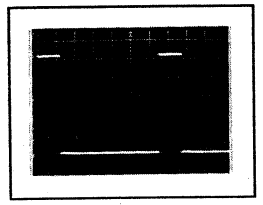
9. 5msec/DIV 1V/DIV



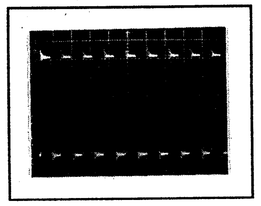
10. 20µsec/DIV 1V/DIV



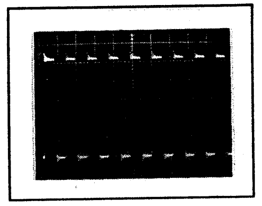
11. 10µsec/DIV 1V/DIV



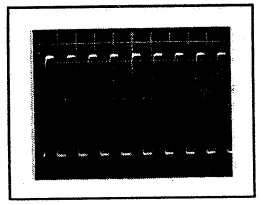
12. 0.2µsec/DIV 1V/DIV



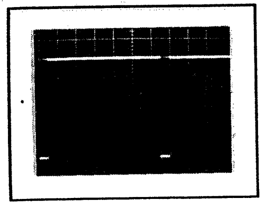
13. 0.2µsec/DIV 1V/DIV



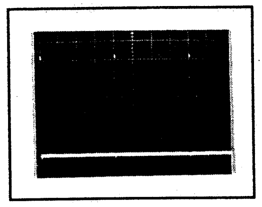
14. 0.2µsec/DIV 1V/DIV



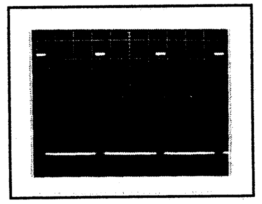
15. 10µsec/DIV 1V/DIV



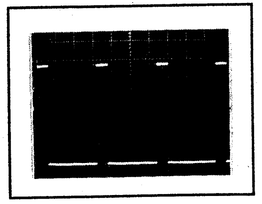
16. 5msec/DIV 1VDIV



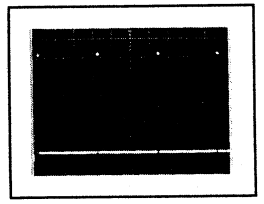
17. 20µsec/DIV 1V/DIV



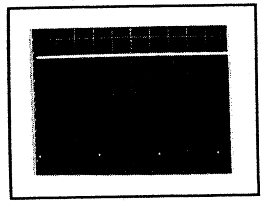
18. 20µsec/DIV 1V/DIV



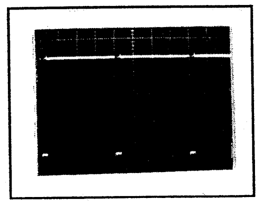
19. 20µsec/DIV 1V/DIV



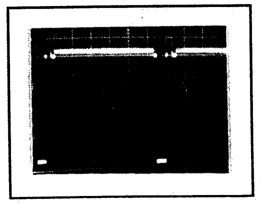
20. 20µsec/DIV 1V/DIV



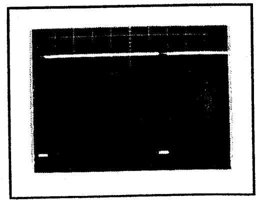
21. 5msec/DIV 1V/DIV



22. 10µsec/DIV 0.2V/DIV



23. 10µsec/DIV 1V/DIV



MAIN BOARD

	IC701	IC705	IC711	IC713	IC714	IC719	IC721	IC726	IC727	IC754	IC755	IC756	IC757	IC758	IC760	IC762	IC763	IC766	IC767	IC768	IC769	IC770
Pin 1	4.1	4.1	0	0	0	5.1	4.1	0	0	5.14	0	0	5.1	4.9	5.1	5.1	0	0	5.1	5.0	5.1	0
2	4.2	4.2	5.1	0	0	5.1	4.2	0	0	0	5.1	2.4	5.1	0.1	0	0	0	0	3.7	0	0	4.8
3	0	0	5.1	0	0	5.1	0	0	0	5.1	5.1	2.4	4.9	4.9	5.1	5.1	0	0	0	0	-	5.0
4	0	0	5.1	5.1	2.2	5.1	0	5.1	2.2	0	5.1	2.4	5.	4.9	0	0	5.1	0	0	531	0	5.0
5	0	0	5.1	5.1	2.2	5.1	0	5.1	2.2	5.1	5.1	2.5	5.1	0.1	5.1	5.1	4.4	0	0	0	5.1	0
6	0	0	5.1	0	2.3	5.1	0	0	2.4	5.1	0	2.5	0	0	5.1	5.1	0.7	0	0	5.1	5.1	0
7	-4.9	-4.9	5.1	0	2.4	5.1	-4.9	0	2.4	5.1	0	2.5	0	-4.8	5.1	5.1	0	-5.0	0	0	0	0
8	0	0	5.1	0	0	5.1	0	0	0	5.1	0.2	0	5.1	0	5.1	5.1	1.6	0	5.1	5.1	0	0
9	0	0	5.1	0.7	0	5.1	0	0.7	2.4	5.1	4.9	2.4	0	5.1	5.1	5.1	1.5	0	0	0	-	0
10	5.1	5.1	0	0.7	0	0	5.1	0.7	2.3	5.1	4.9	2.3	5.1	5.1	5.1	8.1	0	0	0	3.1	0.8	5.0
11	5.1	5.1	5.1	4.9	0	5.1	0	4.9	0	2.3	4.4	2.3	5.1	0	2.2	2.2	4.4	0	0	2.0	0.6	0
12	4.1	4.1	5.1	4.9	0	5.1	4.1	4.9	0	5.1	3.1	2.0.	3.4	0.7	5.1	5.1	5.1	0.8	0	2.8	0.7	0
13	4.0	4.0	5.1	0	0	5.1	-	0	0	0.2	2.8	2.2	0	4.9	0.2	5.1	1.5	4.9	0	1.6	0.6	5.0
14	4.0	3.9	5.1	0	0	5.1	4.1	0	0	3.7	5.1	2.0	5.1	0.7	3.7	3.7	5.1	0.8	5.1	5.1	5.1	5.0
15	4.1	4.1	5.1	0	0	5.1	4.1	0	0	0.2		0		4.9	0.2	0.2		0				
16	5.1	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	0.5		5.1		5.1	0.5	0.5		5.1				
17			5.1			5.1				1.2					1.2	1.2						
18			5.1			5.1				0.8					0.8	0.8						
19			0			5.1				0.2					0.2	0.2						
20			5.1			5.1				4.7					4.7	4.7						
21										0					0	0						
22										5.1					5.1	5.1						

	IC702	IC704	IC706	IC707	IC709	IC712	IC715	IC716	IC718	IC722	IC724	IC725	IC741	IC742	IC744	IC745
Pin 1	4.5	-	4.4	2.6	1.1	-	-	4.5	-	4.5	1.4	-	-		2.1	0
2	3.6	2.4	3.5	2.6	2.4	2.5	2.5	3.6	2.4	3.6	2.4	2.5	2.5		0	0
3	431	0	4.1	2.6	0	0	0	3.9	0	4.1	0	0	0		2.8	0
4	-4.8	2.3	-4.8	-4.8	2.5	2.5	2.5	-4.9	2.6	-4.8	2.5	2.5	2.5		0	0
5	-	5.1	-	0.6	5.1	5.1	5.1	1.9	5.1	-	5.1	5.1	5.1		2.7	5.1
6	-		4.7	0.6				-		-					5.0	
7	4.9		5.0	0.6				4.6		4.6					1.3	
8	5.1			5.0				5.1		5.1					0	
9																

	IC746	IC748	IC749	IC750	IC751	IC752	IC753	IC747	IC759	IC761	IC764	IC765	IC771	IC775	IC776	IC777	IC778
Pin 1	-	0.8	-	0.7	0.7	-	0	-	0	0	5.0	-	-	0.2	0.2	0.2	0.7
2	0	0	2.5	0	0	2.5	-	2.5	-	-	3.5	0.1	4.4	0.2	0.2	0.2	0.7
3	0	0	0	0	0	0	2.4	0	0	0	0	0	0	0	0	0	0
4	5.1	0	2.3	0	0	2.3	5.1	2.3	0	0	3.6	5.0	0.7	4.9	4.9	4.9	0.7
5	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	5.1	5.1	5.1	5.1	5.1
6							-		-	-							
7							0.8		0.8	0.8							
8							0.7		0	0							
9							0		0	0							

MAIN BOARD

	IC703	IC708	IC717	IC723	IC742	IC728	IC729	IC730	IC731	IC732	IC733	IC734	IC735	IC736	IC737	IC738	IC739
Pin 1	0	0	5.1	5.1	2.4	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	1.8	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
3	5.1	5.1	5.1	5.1	2.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
4	5.1	5.1	5.1	5.1	3.0	5.31	5.1	5.1	5.1	5.1	5.31	5.1	5.1	5.1	5.1	5.1	5.1
5	5.1	5.1	5.1	5.1	3.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
6	5.1	5.1	5.1	5.1	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
7	5.1	5.1	5.1	5.1	5.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
8	5.1	5.1	5.1	5.1	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
9	5.1	5.1	5.1	5.1	1.7	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
10	5.1	5.1	5.1	5.1	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
11	5.1	5.1	5.1	5.1	1.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
12	2.4	2.5	2.5	2.5	1.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
13	5.1	5.1	5.1	5.1	1.4	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
14	5.1	5.1	5.1	5.1	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15	5.1	5.1	5.1	2.6	4.7	0.2	0.2.	0.2	0.2	0.2	0.2	0.2.	0.2	0.2	0.2	0.2	0.2
16	5.1	5.1	5.1	5.1	3.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17	2.6	2.6	2.6	2.6	5.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18	5.1	5.1	5.1	5.1	3.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
19	3.6	3.6	3.6	3.6	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	0	0	0	0	3.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21	0	0	0	0	3.0	0	0	0.1	0	0	0	0	0.1	0	0	0	0
22	0	0	0	0	2.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
23	0.6	0.6	0.6	0.6	1.7	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
24	0	0	0	0	2.4	0	0	0	0	0	0	0	0	0	0	0	0
25						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
26						0	0	0	0	0	0	0	0	0	0	0	0
27						3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
28						5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1

	B	C	E
Q400	1.1	5.0	1.4
700	4.0	5.1	3.4
701	4.2	5.1	3.6
702	4.0	5.0	3.4
703	4.2	5.0	3.5
704	4.0	5.1	3.4
705	4.2	5.1	3.6
706	4.0	5.1	3.4
707	4.2	(D)5.1	3.6
708	(G)0	(D)5.1	(S)0.3
709	(G)0	(D)5.1	(S)0.4
710	(G)0	(D)5.1	(S)0.4
711	(G)2.2	(D)5.1	(S)2.5
712	-2.1	2.1	-2.7
713	-2.1	2.1	-2.8
714	0.4	5.0	-0.2
715	0	5.0	-0.6
717	0	1.0	-0.6
718	1.0	5.0	0.4
719	0.2	5.0	-0.4
720	0.4	-4.8	1.0
721	1.0	5.0	0.36
722	-0.4	-4.9	0.2
723	2.5	5.0	1.9
724	2.5	5.0	1.9
729	0.1	5.0	-0.3
725	0	5.0	-0.2

MAIN BOARD

	IC710	IC720	IC740
Pin 1	5.1	5.1	5.1
2	5.1	5.1	0
3	5.1	5.1	5.1
4	5.1	5.1	0
5	5.1	5.1	5.1
6	5.1	5.1	0
7	5.1	5.1	5.1
8	0	0	0
9	4.9	4.9	5.1
10	4.9	4.9	0
11	5.1	5.1	0
12	0.1	0.1	5.1
13	0.2	0.2.	5.1
14	0.1	0.1	5.1
15	1.4	0.1	5.1
16	0.1	0.1	5.1
17	0.1	0.1	5.1
18	0.1	0.1	5.1
19	0	0	5.1
20	0	0	5.1
21	0	0	0
22	0	0	5.1
23	0	0	0
24	0	0	0
25	0	0	5.1
26	0	0	5.1
27	0	0	0
28	0	5.1	5.1
29	5.1	0	5.1
30	5.1	5.1	5.1
31	0	0	5.1
32	0	0	0
33	5.1	5.1	5.1
34	0	5.1	5.1
35	5.1	5.1	0
36	5.1	0	0
37	0	0	5.1
38	1.2	1.3	5.1
39	1.1	-	5.1
40	5.1	5.1	5.1

	IC710	IC720	IC740
Pin 41	5.1	5.1	0
42	0	0	0
43	1.7	1.2	0.5
44	5.1	5.1	3.2
45	0	0	0.5
46	+	0	3.2
47	2.6	2.6	2.4
48	2.4	2.4	2.4
49	0	0	2.4
50	0.8	0.8	2.4
51	5.1	5.1	2.6
52	51	5.1	2.4
53	5.1	5.1	2.4
54	5.1	5.1	2.63
55	5.1	5.1	2.4
56	5.1	5.1	2.4
57	5.1	5.1	2.5
58	5.1	5.1	2.4
59	0	0	2.4
60	0	0	2.5
61	5.1	5.1	2.4
62	0	0	2.4
63	2.4	2.4	2.5
64	0	0	2.4
65	0	0	0
66	5.1	5.1	5.1
67	0	0	0
68	0	0	5.1
69	2.4	2.4	0
70	0	0	5.1
71	0.8	0.8	5.1
72	5.1	5.1	1.7
73	5.1	5.1	1.7
74	5.1	5.1	1.5
75	5.1	5.1	1.5
76	5.1	5.1	1.4
77	5.1	5.1	5.1
78	5.1	5.1	1.4
79	5.1	5.1	0
80	5.1	5.1	0

	IC710	IC720	IC740
Pin 81	5.1	5.1	5.1
82	1.2	1.1	0
83	1.2	1.1	0
84	0	0	5.1
85	1.2	1.2	0
86	1.2	0	5.1
87	0	0	5.1
88	5.1	5.1	5.1
89	5.1	5.1	0
90	0	0	5.1
91	0	0	5.1
92	1.2	0	5.1
93	0	0	0
94	5.0	5.0	0
95	0	0	0
96	4.7	4.7	5.1
97	1.4	1.5	2.3
98	5.1	0	2.6
99	1.3	1.3	1.3
100	0	0	5.1
101	0	0	0
102	1.5	1.5	1.4
103	2.3	1.7	0
104	0	0	0.5
105	0,1	0.1	0.2.3
106	1.2	0.1	2.3
107	0.1	0.1	0
108	0.1	1.1	5.1
109	0.1	1.1	2.4
110	0.25	0.2	2.4
111	.2	1.1	0.2
112	5.1	5.1	0.2
113	4.9	4.9	0.8
114	4.9	4.9	0.8
115	0	0	0
116	5.1	5.1	0.2
117	5.1	5.1	2.5
118	5.1	5.1	0
119	5.1	5.1	0
120	5.1	5.1	5.1

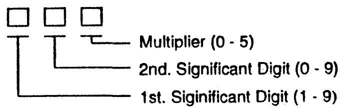
	IC710	IC720	IC740
Pin 121	5.1	5.1	0
122	5.1	5.1	0
123	5.1	5.1	0
124	5.1	5.1	0
125	5.1	5.1	0
126	5.1	5.1	0
127	5.1	5.1	0
128	0	0	5.1
129	5.1	5.1	0
130	5.1	5.1	5.1
131	5.1	5.1	0
132	5.1	5.1	5.1
133	5.1	5.1	0
134	5.1	5.1	0
135	5.1	5.1	5.1
136	5.1	5.1	0
137	5.1	5.1	0
138	0	0	0
139	0	0	0
140	5.1	5.1	5.1
141	0	0	0
142	0	0	0
143	0	0	0
144	0	0	0
145	0	0	0
146	5.1	5.1	0
147	5.1	5.1	0
148	5.1	5.1	5.1
149	5.1	5.1	0
150	5.1	5.1	5.1
151	5.1	5.1	0
152	5.1	5.1	0
153	5.1	5.1	0
154	5.1	5.1	0
155	0	0	0
156	5.1	5.1	0
157	5.1	5.1	0
158	5.1	5.1	5.1
159	5.1	5.1	0
160	5.1	5.1	0

REF. NO.	NTSC	PAL
IC400	YWTC4W53F	Open
IC741	Open	YWSC7S04F
IC742	Open	YWM51272FP
IC752	Open	YWSC7S04F
IC764	Open	YWSC7S08F
Q711	Open	2SK209
Q712	Open	2SC2412K-QRS
Q713	Open	2SC2412K-QRS
Q723	Open	2SC2412K-QRS
D706	Open	MA372
D707	Open	MA372
D712	Open	YWDAN212K
R419	Open	1k Ω
R427	0 Ω	Open
R434	Open	10k Ω
R436	Open	1k Ω
R454	2.2k Ω	Open
R455	1k Ω	Open
R456	1k Ω	Open
R728	0 Ω	Open
R739	5.6k Ω	3.3k Ω
R757	0 Ω	Open
R803	Open	150 Ω
R804	0 Ω	Open
R805	Open	150 Ω
R806	Open	330 Ω
R807	Open	330 Ω
R808	Open	560 Ω
R809	Open	6.8K Ω
R810	Open	100k Ω
R811	Open	3k Ω
R812	Open	1M Ω

REF. NO.	NTSC	PAL
R813	Open	100k Ω
R815	0 Ω	Open
R816	Open	1k Ω
R819	Open	1k Ω
R820	Open	2.2k Ω
R821	Open	1k Ω
R822	Open	2.2K Ω
R834	Open	1.5k Ω
R835	Open	1k Ω
R836	Open	680 Ω
R853	0 Ω	1.5k Ω
R854	Open	1k Ω
R855	Open	680 Ω
R874	Open	0 Ω
R875	Open	15k Ω
R876	Open	27K Ω
R879	Open	27k Ω
R880	Open	15k Ω
R881	Open	1k Ω
R882	Open	1k Ω
VR702	Open	2k Ω
VR703	5k Ω	2k Ω
VR705	Open	10k Ω
VR706	Open	10k Ω
VR708	Open	10k Ω
VR709	Open	10k Ω
Z700	Open	RKM10L152F

REF. NO.	NTSC	PAL
C405	Open	0.1 µF
C406	Open	100 pF
C408	Open	0.1 µF
C413	1 µF	Open
C769	1000 pF	2200 pF
C819	Open	1 µF 50V
C820	Open	3300 pF
C821	Open	330 pF
C822	Open	0.1 µF
C823	Open	330 pF
C824	Open	330 pF
C825	Open	47 µF 10V
C831	Open	0.1 µF
C832	Open	0.047 µF
C833	Open	10 µF 16V
C834	Open	1000 pF
C835	Open	0.047 µF
C846	Open	0.1 µF
C847	Open	47 µF 10V
C848	Open	0.1 µF
C849	Open	47 µF 10V
C851	Open	0.047 µF
C854	Open	0.1 µF
C856	Open	0.047 µF
C857	Open	10 µF 16V
C858	Open	0.1 µF
C859	Open	1000 pF
C860	Open	27 pF
CF702	ELB4B544	Open
L723	Open	EIC4EJ003E
L726	Open	47 µH
TP704	Open	RCT2125TPV
TP707	Open	RCT2125TPV

Note: The value indicated in the schematic diagram should be read as follows:


Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33×10^0 = 33 Ω
561 → 56×10^1 = 560 Ω
123 → 12×10^3 = 12k Ω
0R00 = 0 Ω

For Capacitor:

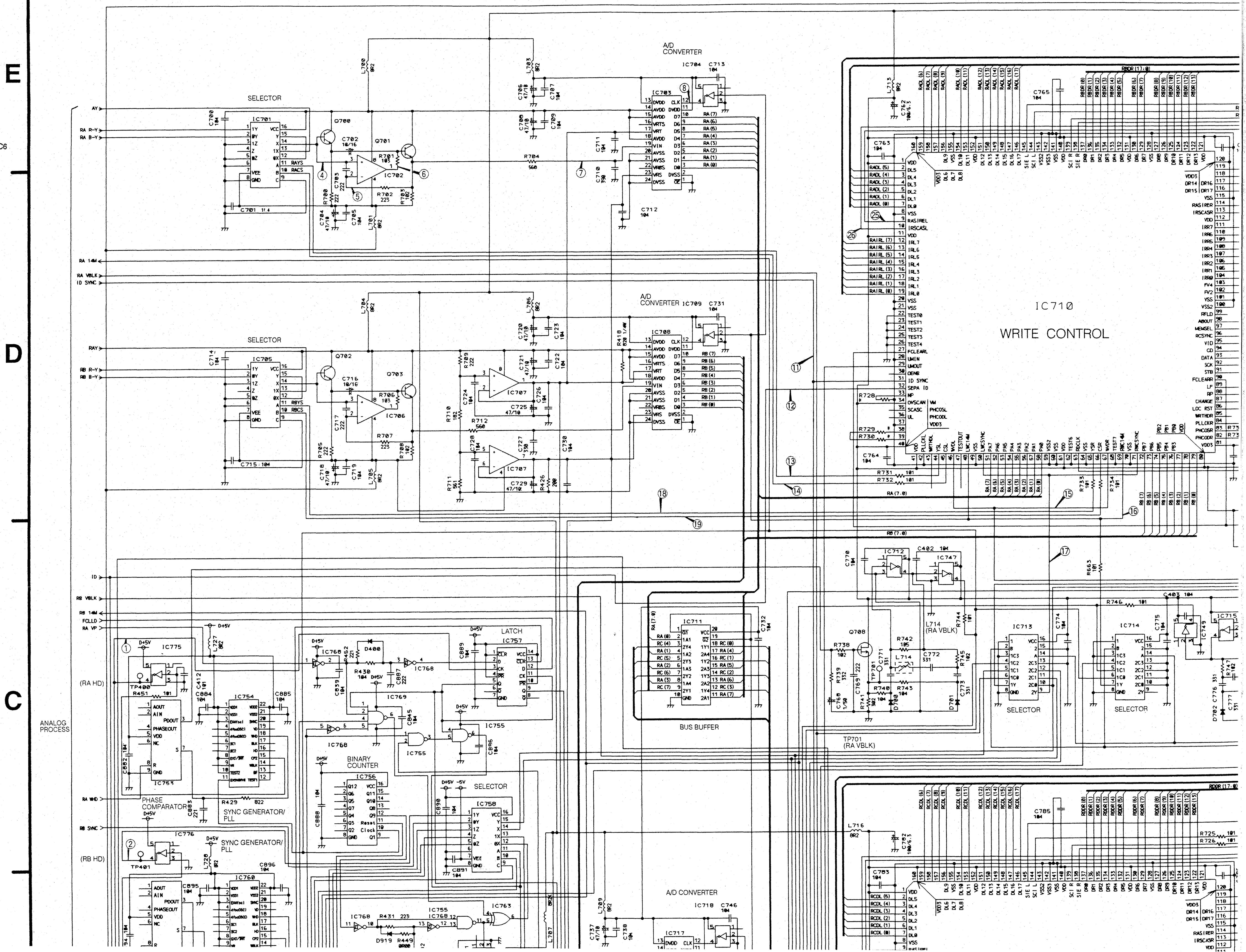
820 → 82×10^0 = 82 pF
102 → 10×10^2 = 1000 pF = 0.001 µF
104 → 10×10^4 = 100000 pF = 0.1 µF
The suffix attached to capacitance indicates a type of capacitor.

SCHEMATIC DIAGRAM OF MAIN

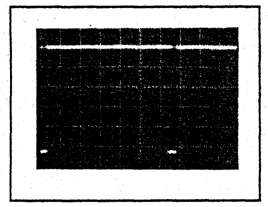
MAIN BOARD (DIGITAL PROCESS SECTION)

< Index >
Main Board
(Digital Process Section)

IC701	D1/E1	IC755	BC, C2
IC702	D2/E2	IC756	C2
IC703	D3/E3	IC757	C2
IC704	E3	IC758	C2
IC705	D1	IC759	B1
IC706	D2	IC760	B1
IC707	D2	IC761	B1
IC708	D3	IC762	B1
IC709	D3	IC763	A6, B2, C6
IC710	D3-4/E3-4	IC764	B7
IC711	C3	IC765	C7/C8
IC712	C3	IC766	B2
IC713	C4	IC767	B2
IC714	C4	IC768	C2
IC715	C4	IC769	C2
IC716	B2	IC770	A7/B7
IC717	B3	IC771	B2
IC718	B3	IC775	C1
IC719	B2/B3	IC776	C1
IC720	B3/B4	IC777	B1
IC721	A2	IC778	A4
IC722	A2	Q400	C7
IC723	A2	Q700	E2
IC724	A3	Q701	E2
IC725	A3	Q702	D2
IC726	A4	Q703	D2
IC727	A4	Q704	B2
IC728	D5/E5	Q705	B2
IC729	D5/E5	Q706	A2
IC730	D6/E6	Q707	A2
IC731	C5/D5	Q708	C3
IC732	C5/D5	Q709	C4
IC733	C6/D6	Q710	A3
IC734	B5/C5	Q711	C7
IC735	B5/C5	Q712	C6
IC736	B6/C6	Q713	C7
IC737	B5	Q714	C7
IC738	B5	Q715	B6
IC739	B6	Q717	B6
IC740	D6-7/E6-7	Q718	B6
IC741	C7	Q719	A7/B7
IC742	B7	Q720	B7
IC744	A7	Q721	B7
IC745	A4	Q722	A7
IC746	A3	Q723	C6
IC747	C3	Q724	C7
IC748	C4/D4	Q725	C8
IC749	C4	Q729	B6
IC750	A3	D400	C2
IC751	A4	D700	C3
IC752	C7	D701	C3
IC753	C1	D702	C4
IC754	C1	D703	C4
		D704	A3
		D705	A3
		D706	C7
		D707	C7
		D708	B7
		D709	A7
		D712	B7
		D714	C7


E
D
C
ANALOG PROCESS
SELECTOR
IC701
IC702
A/D CONVERTER
IC704
IC703
SELECTOR
IC705
IC706
IC707
A/D CONVERTER IC709
IC708
IC710
WRITE CONTROL
IC711
BUS BUFFER
IC712
IC747
IC713
SELECTOR
IC714
SELECTOR
IC715
Q700
Q701
Q702
Q703
Q708
L714 (RA VBLK)
TP701 (RA VBLK)
IC775
TP400
(RA HD)
IC753
PHASE COMPARATOR
IC754
SYNC GENERATOR/ PLL
LATCH
IC757
IC768
IC769
IC755
BINARY COUNTER
IC756
SELECTOR
IC758
IC776
TP401
(RB HD)
SYNC GENERATOR/ PLL
IC760
IC763
A/D CONVERTER
IC718
IC717
AY
RA R-Y
RA B-Y
RA 14M
RA VBLK
ID SYNC
RAY
RB R-Y
RB B-Y
ID
RB VBLK
RB 14M
FCLLD
RA VP
RA WHD
RB SYNC
RA(7.0)
RB(7.0)
RBDR(17:0)
RDDR(17:0)
D+5V
-5V

1. 10µsec/DIV 2V/DIV



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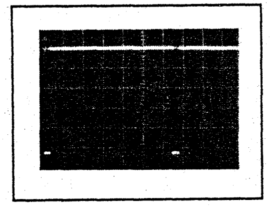

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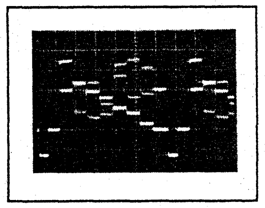
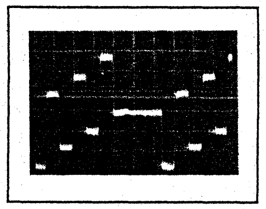
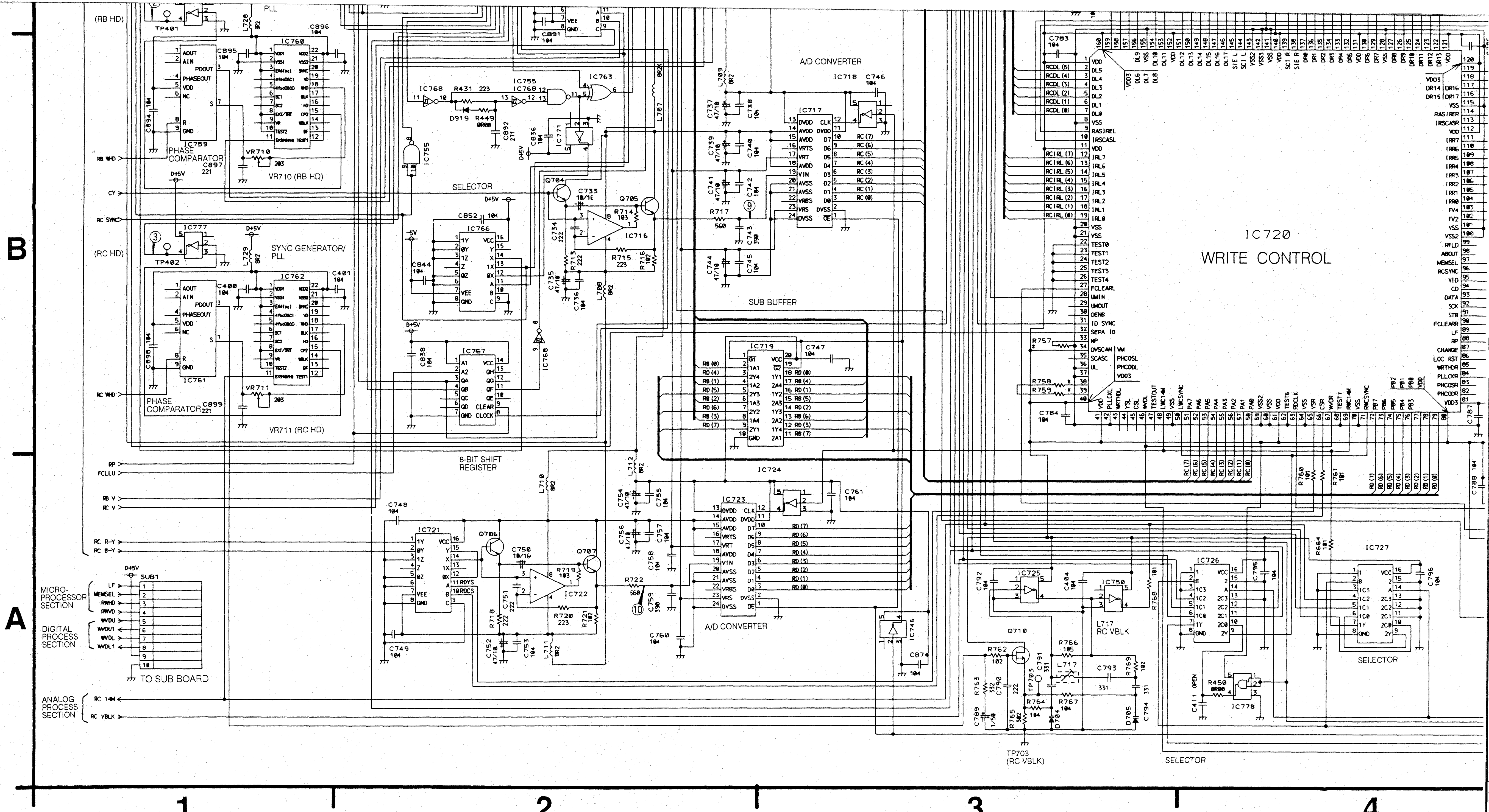
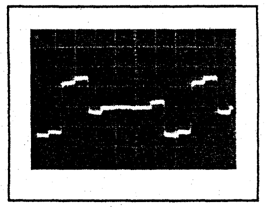


4. 10µsec/DIV 0.5V/DIV

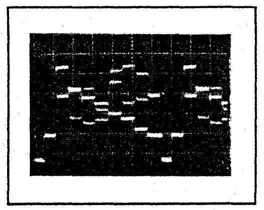




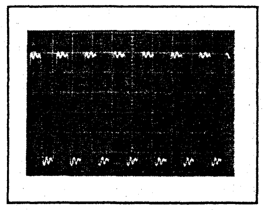
5. 10µsec/DIV 0.2V/DIV



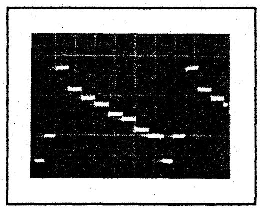
6. 10µsec/DIV 0.5V/DIV



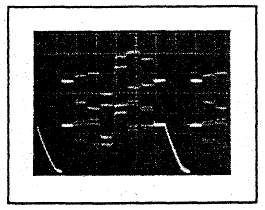
7. 10µsec/DIV 0.5V/DIV



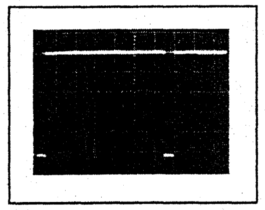
8. 50nsec/DIV 1V/DIV



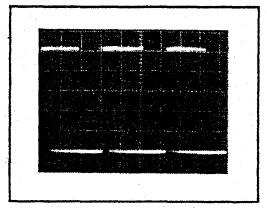
9. 10µsec/DIV 0.5V/DIV



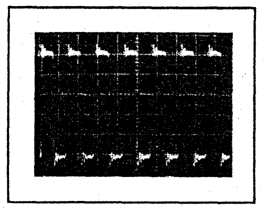
10. 10µsec/DIV 0.5V/DIV



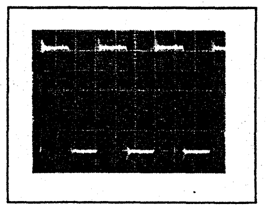
11. 10µsec/DIV 1V/DIV



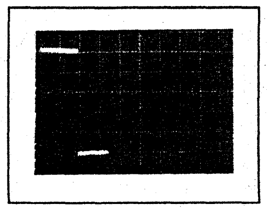
12. 20µsec/DIV 1V/DIV



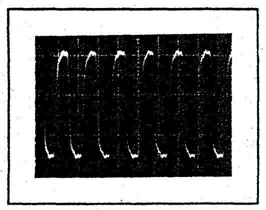
13. 0.1µsec/DIV 1V/DIV



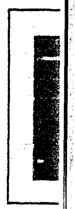
14. 0.2µsec/DIV 1V/DIV



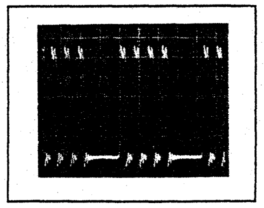
15. 10msec/DIV 1V/DIV



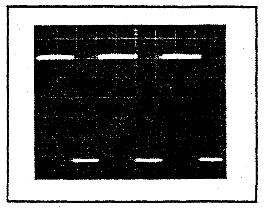
16. 5



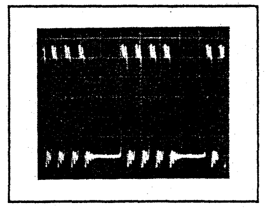
26. 1µsec/DIV 1V/DIV



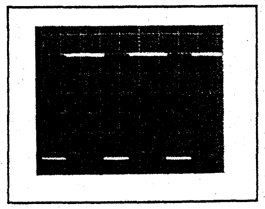
27. 0.1µsec/DIV 1V/DIV



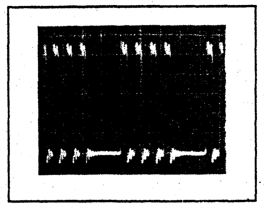
28. 20µsec/DIV 1V/DIV



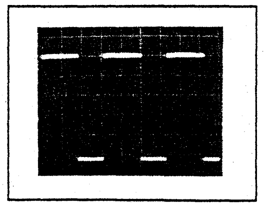
29. 0.1µsec/DIV 1V/DIV



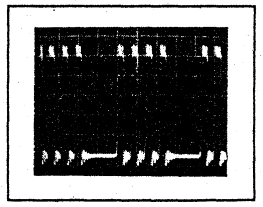
30. 20µsec/DIV 1V/DIV



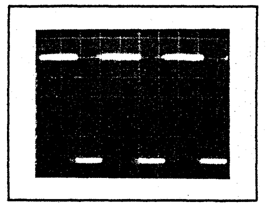
31. 0.1µsec/DIV 1V/DIV



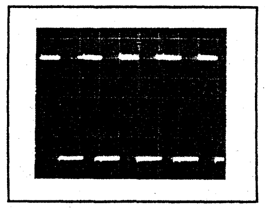
32. 20µsec/DIV 1V/DIV



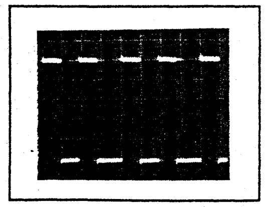
33. 0.1µsec/DIV 1V/DIV



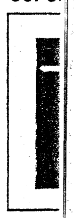
34. 20µsec/DIV 1V/DIV



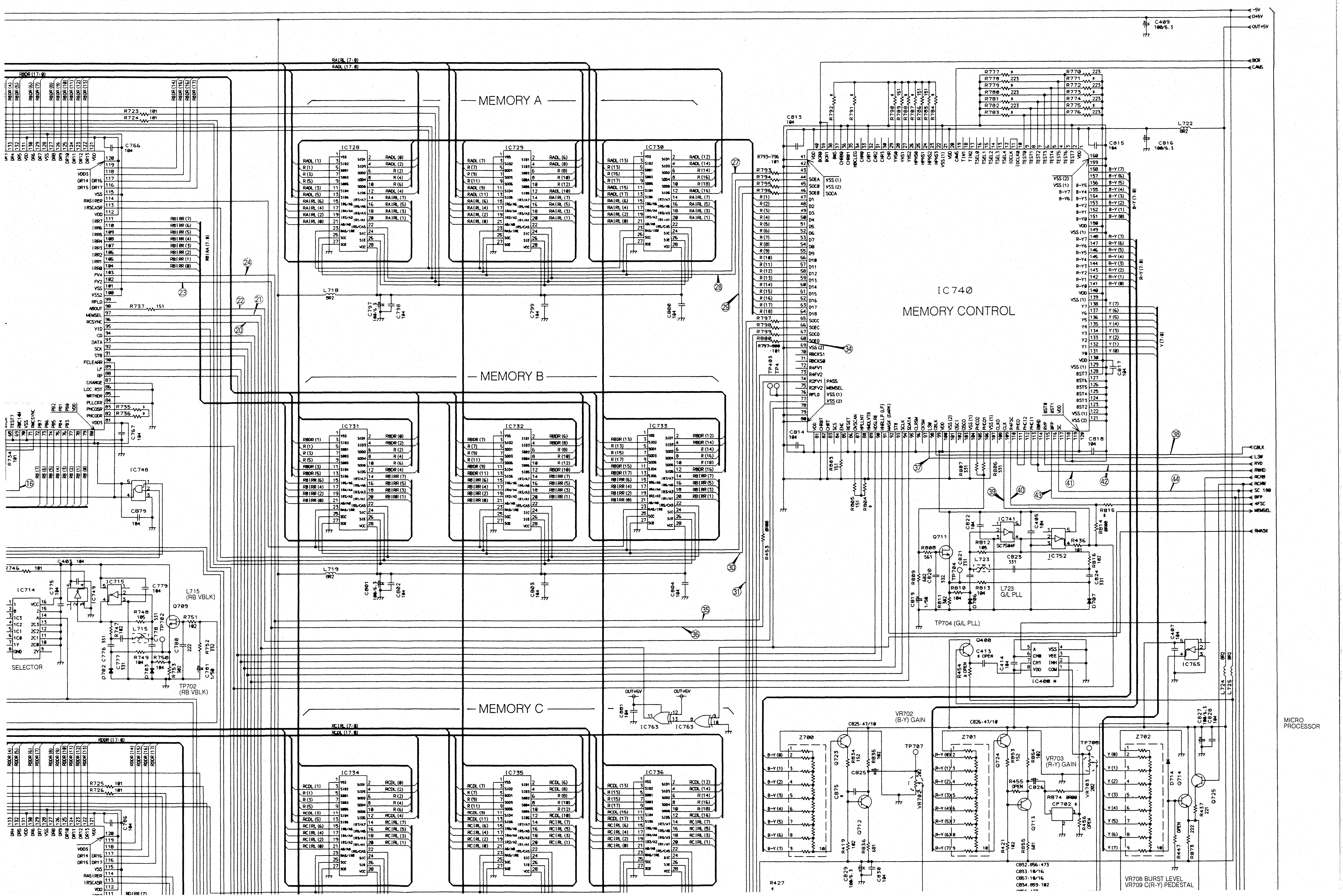
35. 5msec/DIV 1V/DIV

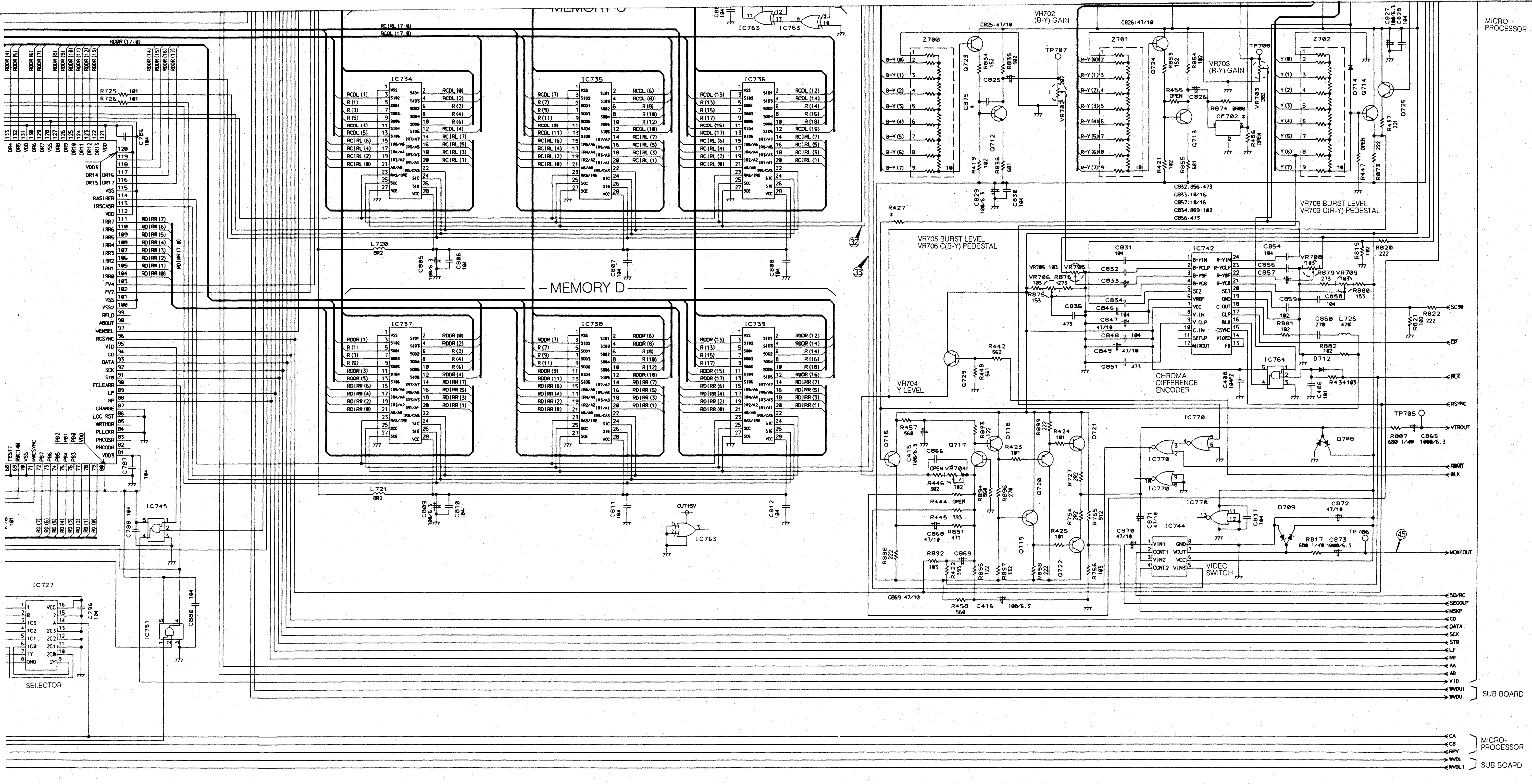


36. 5



M OF MAIN BOARD (DIGITAL PROCESS SECTION)


MEMORY A
MEMORY B
MEMORY C
IC728
IC729
IC730
IC731
IC732
IC733
IC734
IC735
IC736
IC740
MEMORY CONTROL
IC748
IC714
SELECTOR
IC715
IC749
L715
(RB VBLK)
TP702
(RB VBLK)
Q709
L718
L719
IC763
IC741
SC7S04F
IC752
Q711
L723
G/L PLL
TP704 (G/L PLL)
Q400
IC400 *
IC765
L722
Z700
Z701
Z702
VR702
(B-Y) GAIN
VR703
(R-Y) GAIN
TP707
TP708
Q723
Q712
Q724
Q713
Q714
Q725
VR708 BURST LEVEL
VR709 C(R-Y) PEDESTAL
MICRO PROCESSOR
-5V
D+5V
OUT+5V
BCR
CAWS
CBLK
LSW
RVD
RWHD
RCHB
RCHW
SC 180
BFP
4FSC
MEMSEL
RMASK
RA(RL(7:0)
RADL(17:0)
RBDR(17:0)
RC(RL(7:0)
RCDL(17:0)
RDDR(17:0)
B-Y(7:0)
R-Y(7:0)
Y(7:0)
C409 100/6.3
C816 100/6.3

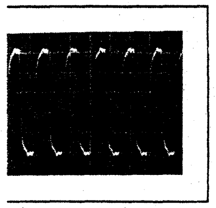

MEMORY D
IC734
IC735
IC736
IC737
IC738
IC739
IC727
SELECTOR
IC745
IC751
IC763
L720
L721
Z700
Z701
Z702
VR702 (B-Y) GAIN
VR703 (R-Y) GAIN
VR705 BURST LEVEL
VR706 C(B-Y) PEDESTAL
VR708 BURST LEVEL
VR709 C(R-Y) PEDESTAL
VR704 Y LEVEL
IC742
CHROMA DIFFERENCE ENCODER
IC764
IC770
IC744
VIDEO SWITCH
TP705
TP706
TP707
TP708
D708
D709
D712
D714
MICRO PROCESSOR
SUB BOARD
MICRO-PROCESSOR
SUB BOARD
VTROUT
MONIOUT
RSYNC
BLK
CP
SC90
OUT+5V

4

5

6

7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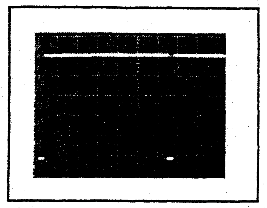
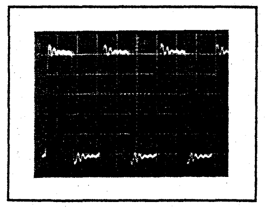

16. 50nsec/DIV 1VDIV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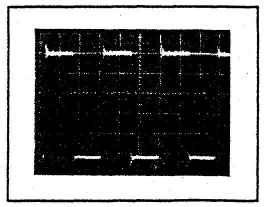
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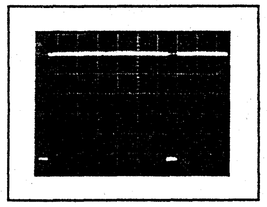
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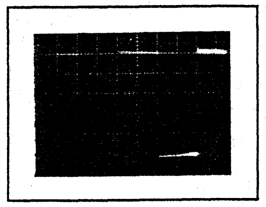
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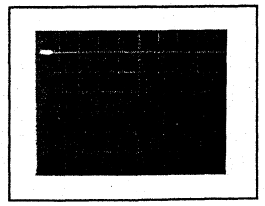
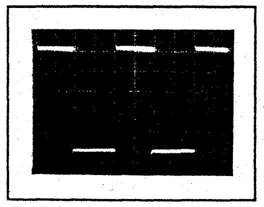

21. 10msec/DIV 1V/DIV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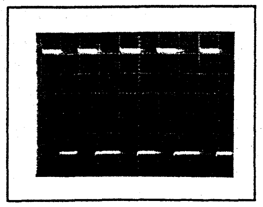
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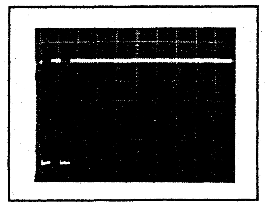
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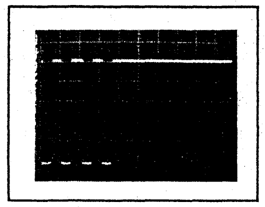
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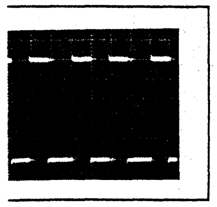
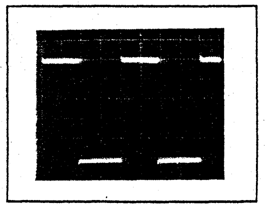

msec/DIV 1V/DIV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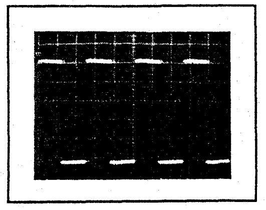
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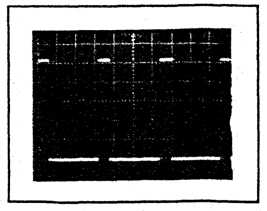
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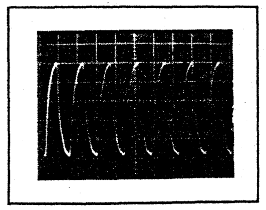
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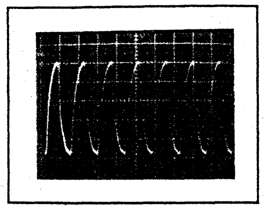
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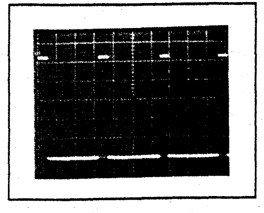
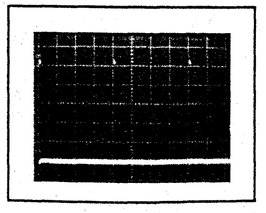

41. 20µsec/DIV 1V/DIV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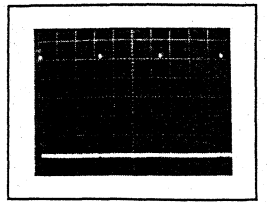
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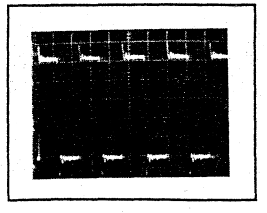
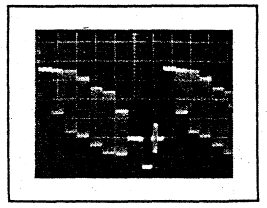

44. 0.1µsec/DIV 1V/DIV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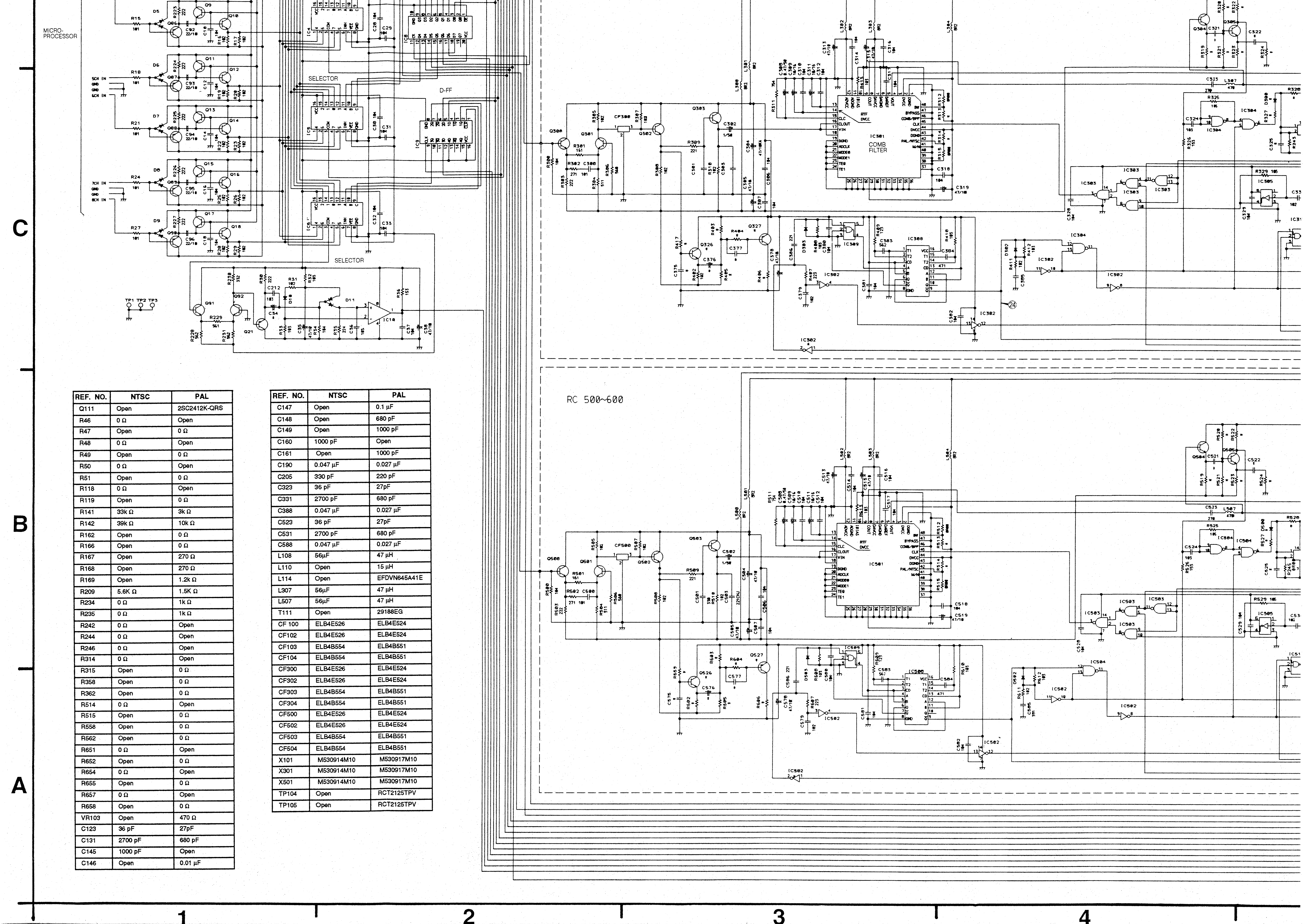
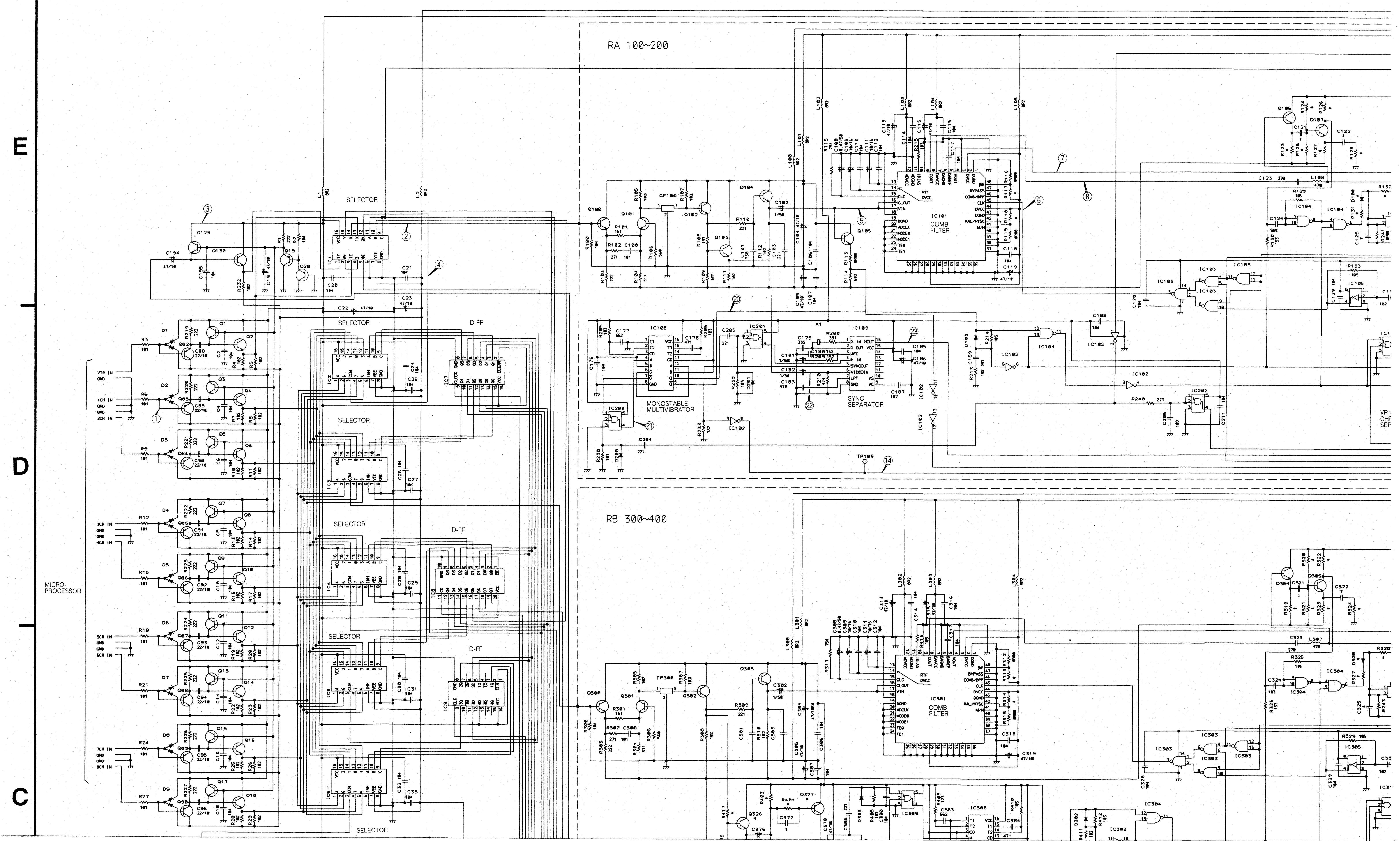


REF. NO.	NTSC	PAL
Q111	Open	2SC2412K-QRS
R46	0 Ω	Open
R47	Open	0 Ω
R48	0 Ω	Open
R49	Open	0 Ω
R50	0 Ω	Open
R51	Open	0 Ω
R118	0 Ω	Open
R119	Open	0 Ω
R141	33k Ω	3k Ω
R142	39k Ω	10k Ω
R162	Open	0 Ω
R166	Open	0 Ω
R167	Open	270 Ω
R168	Open	270 Ω
R169	Open	1.2k Ω
R209	5.6K Ω	1.5K Ω
R234	0 Ω	1k Ω
R235	0 Ω	1k Ω
R242	0 Ω	Open
R244	0 Ω	Open
R246	0 Ω	Open
R314	0 Ω	Open
R315	Open	0 Ω
R358	Open	0 Ω
R362	Open	0 Ω
R514	0 Ω	Open
R515	Open	0 Ω
R558	Open	0 Ω
R562	Open	0 Ω
R651	0 Ω	Open
R652	Open	0 Ω
R654	0 Ω	Open
R655	Open	0 Ω
R657	0 Ω	Open
R658	Open	0 Ω
VR103	Open	470 Ω
C123	36 pF	27pF
C131	2700 pF	680 pF
C145	1000 pF	Open
C146	Open	0.01 µF

REF. NO.	NTSC	PAL
C147	Open	0.1 µF
C148	Open	680 pF
C149	Open	1000 pF
C160	1000 pF	Open
C161	Open	1000 pF
C190	0.047 µF	0.027 µF
C205	330 pF	220 pF
C323	36 pF	27pF
C331	2700 pF	680 pF
C388	0.047 µF	0.027 µF
C523	36 pF	27pF
C531	2700 pF	680 pF
C588	0.047 µF	0.027 µF
L108	56µF	47 µH
L110	Open	15 µH
L114	Open	EFDVN645A41E
L307	56µF	47 µH
L507	56µF	47 µH
T111	Open	29188EG
CF 100	ELB4E526	ELB4E524
CF102	ELB4E526	ELB4E524
CF103	ELB4B554	ELB4B551
CF104	ELB4B554	ELB4B551
CF300	ELB4E526	ELB4E524
CF302	ELB4E526	ELB4E524
CF303	ELB4B554	ELB4B551
CF304	ELB4B554	ELB4B551
CF500	ELB4E526	ELB4E524
CF502	ELB4E526	ELB4E524
CF503	ELB4B554	ELB4B551
CF504	ELB4B554	ELB4B551
X101	M530914M10	M530917M10
X301	M530914M10	M530917M10
X501	M530914M10	M530917M10
TP104	Open	RCT2125TPV
TP105	Open	RCT2125TPV

SCHEMATIC DIAGRAM OF MAIN BOARD (ANAL

MAIN BOARD (ANALOG PROCESS SECTION)


E
D
C
RA 100~200
RB 300~400
SELECTOR
D-FF
MICRO-PROCESSOR
VTR IN
1CH IN
2CH IN
3CH IN
4CH IN
5CH IN
6CH IN
7CH IN
8CH IN
GND
IC101
COMB FILTER
IC301
COMB FILTER
IC108
MONOSTABLE MULTIVIBRATOR
IC109
SYNC SEPARATOR
TP109
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
①
②
③
④
⑤
⑥
⑦
⑧
⑭
⑳
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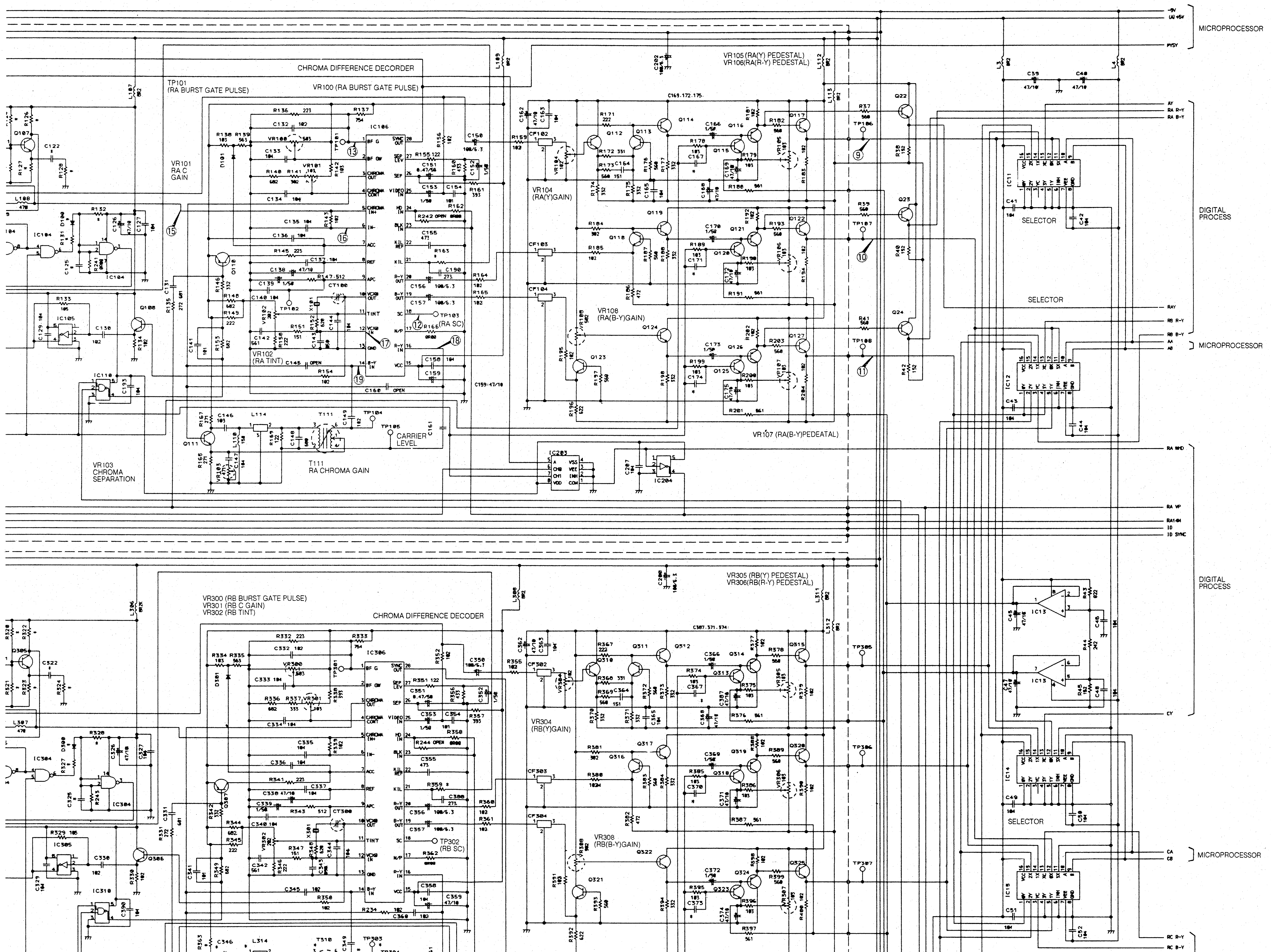
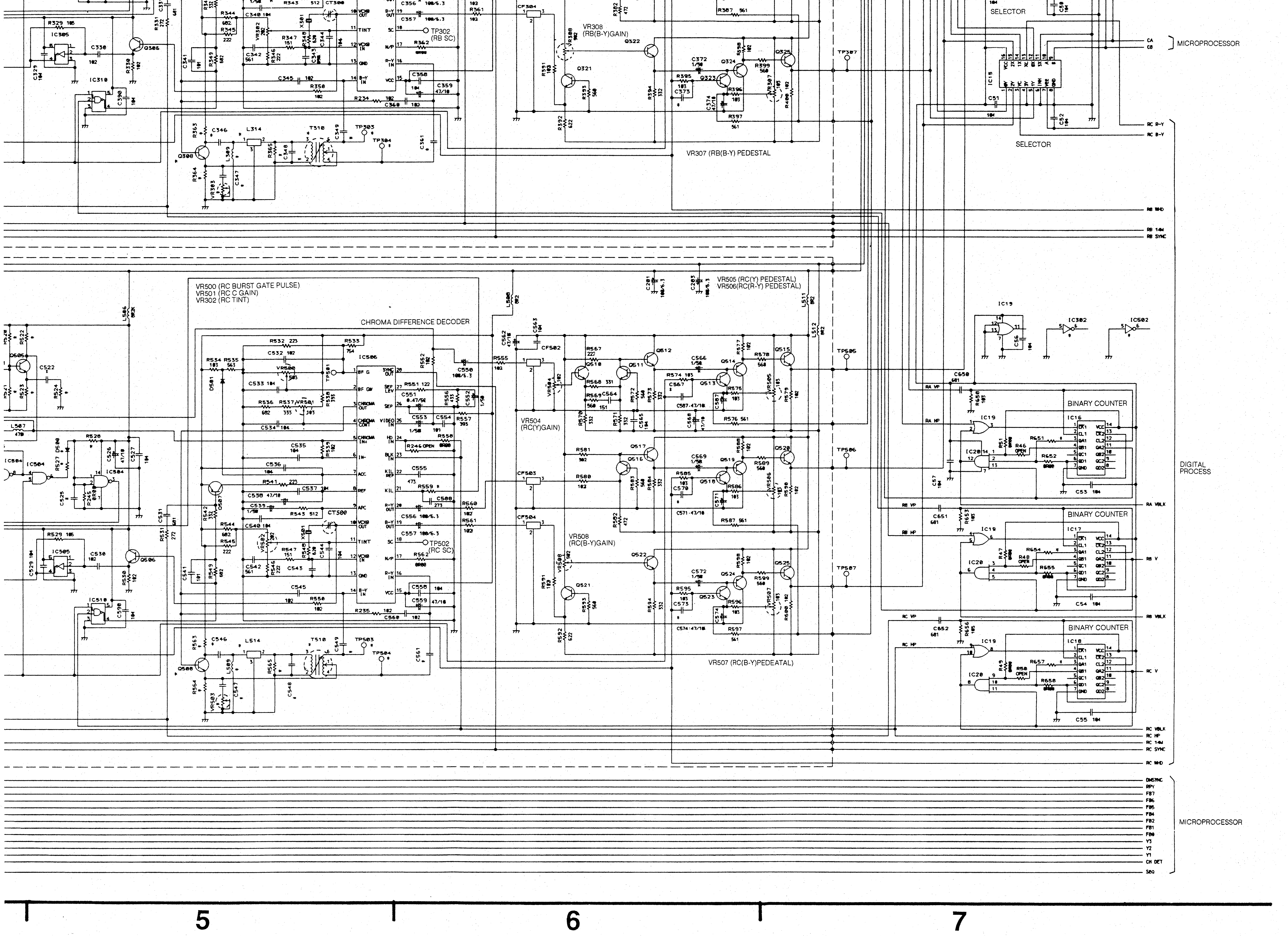
㉓

(ANALOG PROCESS SECTION)


CHROMA DIFFERENCE DECORDER
TP101 (RA BURST GATE PULSE)
VR100 (RA BURST GATE PULSE)
VR101 RA C GAIN
VR102 (RA TINT)
VR103 CHROMA SEPARATION
T111 RA CHROMA GAIN
CARRIER LEVEL
IC106
IC203
IC204
VR104 (RA(Y)GAIN)
VR105 (RA(Y) PEDESTAL)
VR106(RA(R-Y) PEDESTAL)
VR107 (RA(B-Y)PEDEATAL)
VR108 (RA(B-Y)GAIN)
TP106
TP107
TP108
MICROPROCESSOR
DIGITAL PROCESS
SELECTOR
IC11
IC12
IC13
IC14
IC15
VR300 (RB BURST GATE PULSE)
VR301 (RB C GAIN)
VR302 (RB TINT)
CHROMA DIFFERENCE DECODER
IC306
VR304 (RB(Y)GAIN)
VR305 (RB(Y) PEDESTAL)
VR306(RB(R-Y) PEDESTAL)
VR308 (RB(B-Y)GAIN)
TP302 (RB SC)
TP303
TP305
TP306
TP307

< Index >
Main Board
(Analog Process Section)

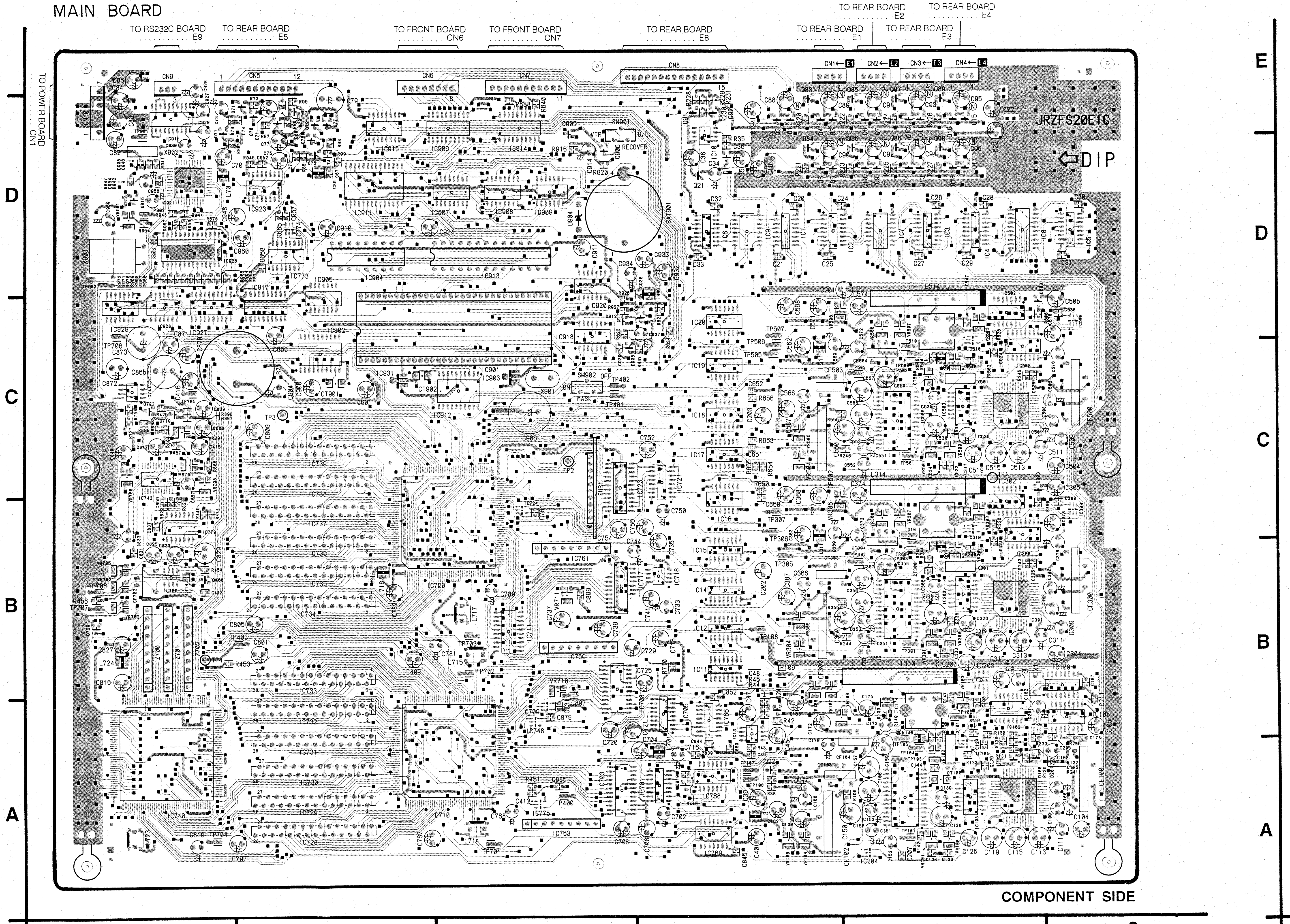
IC1	E1/E2	Q2	D1
IC2	D1/D2	Q3	D1
IC3	D1/D2	Q4	D1
IC4	D1/D2	Q5	D1
IC5	C1/C2	Q6	D1
IC6	C1/C2	Q7	D1
IC7	D2	Q8	D1
IC8	D2	Q9	D1
IC9	C2	Q10	D1
IC10	C2	Q11	C1/D1
IC11	E7	Q12	C1
IC12	D7	Q13	C1
IC13	D7	Q14	C1
IC14	C7	Q15	C1
IC15	C7	Q16	C1
IC16	B7	Q17	C1
IC17	B7	Q18	C1
IC18	A7	Q19	E1
IC19	A7/B7	Q20	E1
IC20	A7/B7	Q21	C1
IC101	E3	Q22	E4
IC102	D3/D4	Q23	E7
IC103	D4, E4	Q24	D7/E7
IC104	E4, E5	Q82	D1
IC105	D5/E5	Q83	D1
IC106	D5-6/E5-6	Q84	D1
IC108	D2/D3	Q85	D1
IC109	D3	Q86	D1
IC110	D5	Q87	C1
IC200	D2	Q88	C1
IC201	D3	Q89	C1
IC202	D4	Q90	C1
IC203	D6	Q91	C1
IC204	D6	Q92	C1
IC301	C3	Q100	E2
IC302	C3, C4, B7	Q101	E2
IC303	C4	Q103	E3
IC304	C4, C5	Q104	E3
IC305	C5	Q105	E3
IC306	C5/C6	Q106	E4
IC308	C3	Q107	E4/E5
IC309	C3	Q108	D5/E5
IC310	C5	Q110	E5
IC501	B3	Q111	D5
IC502	A3, A4, B8	Q112	E6
IC503	B4, B5	Q113	E6
IC504	B4	Q114	E6
IC505	B5	Q115	E6
IC506	B5/B6	Q116	E6
IC508	A3-4/B3	Q117	E7
IC509	B3	Q118	E6
IC510	B3	Q119	E6
Q1	D1	Q120	E6
Q121	E6	Q519	B6
Q122	E7	Q520	B7
Q123	D6	Q521	B6
Q124	D6	Q522	B6
Q125	D6	Q523	B6
Q126	D6	Q524	B6
Q127	D7	Q525	B7
Q129	E1	Q526	A3
Q130	E1	Q527	B3
Q300	C2	D1	D1
Q301	C2	D2	D1
Q302	C3	D3	D1
Q303	C3	D4	D1
Q304	D4	D5	D1
Q306	D4	D6	C1
Q307	C5	D7	C1
Q308	C5	D8	C1
Q310	D6	D9	C1
Q311	D6	D10	C1
Q312	D6	D11	C2
Q313	D6	D101	E5
Q314	D6	D103	C3
Q315	D7	D200	C2
Q316	C6	D201	C3
Q317	C6	D301	D5
Q318	C6	D302	C4
Q319	C6	D501	B5
Q320	C5	D502	A4
Q321	C6		
Q322	C6		
Q323	C6		


SELECTOR
MICROPROCESSOR
CA
CB
IC15
SELECTOR
RC R-Y
RC B-Y
VR308
(RB(B-Y)GAIN)
VR307 (RB(B-Y) PEDESTAL)
TP302
(RB SC)
TP303
TP304
TP307
RB WHD
RB 14M
RB SYNC
VR500 (RC BURST GATE PULSE)
VR501 (RC C GAIN)
VR302 (RC TINT)
CHROMA DIFFERENCE DECODER
IC506
CT500
TP502
(RC SC)
TP503
TP504
VR504
(RC(Y)GAIN)
VR505 (RC(Y) PEDESTAL)
VR506(RC(R-Y) PEDESTAL)
VR508
(RC(B-Y)GAIN)
VR507 (RC(B-Y)PEDEATAL)
TP505
TP506
TP507
IC19
IC302
IC502
BINARY COUNTER
IC16
BINARY COUNTER
IC17
BINARY COUNTER
IC18
IC20
RA VP
RA HP
RA VBLK
RB VP
RB HP
RB V
RB VBLK
RC VP
RC HP
RC V
RC VBLK
RC HP
RC 14M
RC SYNC
RC WHD
DIGITAL
PROCESS
DHSYNC
RPY
FB7
FB6
FB5
FB4
FB2
FB1
FB0
Y3
Y2
Y1
CH DET
SEQ
MICROPROCESSOR
5
6
7

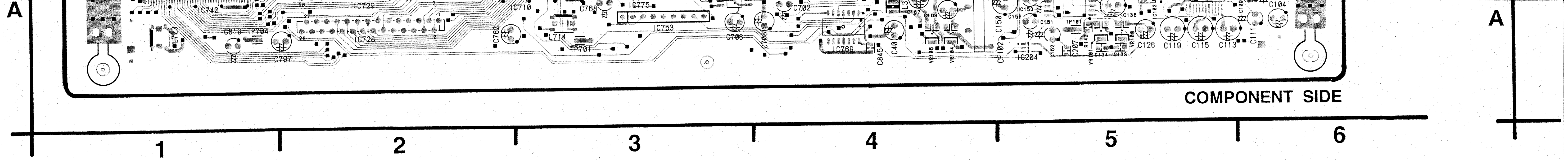
Q311	D6	D10	C1
Q312	D6	D11	C2
Q313	D6	D101	E5
Q314	D6	D103	C3
Q315	D7	D200	C2
Q316	C6	D201	C3
Q317	C6	D301	D5
Q318	C6	D302	C4
Q319	C6	D501	B5
Q320	C5	D502	A4
Q321	C6		
Q322	C6		
Q323	C6		
Q324	C6		
Q325	C7		
Q326	C3		
Q327	C3		
Q500	B2		
Q501	B2		
Q502	B3		
Q503	B3		
Q504	B4		
Q505	B4		
Q506	B5		
Q507	B5		
Q508	A5		
Q510	B6		
Q511	B6		
Q512	B6		
Q513	B6		
Q514	B6		
Q515	B7		
Q516	B6		
Q517	B6		
Q518	B6		

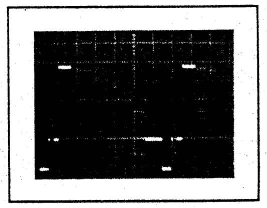
CONDUCTOR VIEW

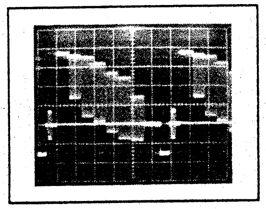
MAIN BOARD

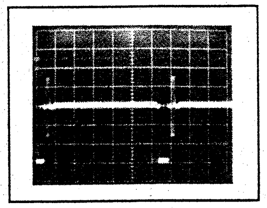

TO RS232C BOARD E9
TO REAR BOARD E5
TO FRONT BOARD CN6
TO FRONT BOARD CN7
TO REAR BOARD E8
TO REAR BOARD E1
TO REAR BOARD E2
TO REAR BOARD E3
TO REAR BOARD E4
TO POWER BOARD CN1
CN9
CN5
CN6
CN7
CN8
CN1← E1
CN2← E2
CN3← E3
CN4← E4
CN10
JRZFS20E1C
⇦DIP
SW901
VTR
O.C.
RECOVER
BAT901
SW902
ON
OFF
MASK
X901
IC901
IC902
IC904
IC913
IC739
IC738
IC737
IC736
IC735
IC734
IC733
IC732
IC731
IC730
IC729
IC726
IC740
IC720
IC710
IC761
IC759
IC753
L514
L314
L114
CF500
CF300
CF100
A
B
C
D
E

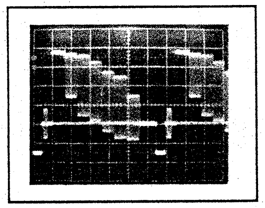
COMPONENT SIDE

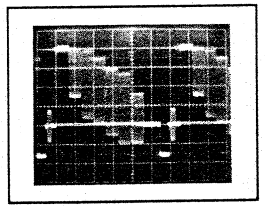


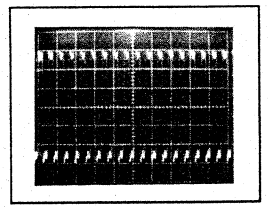

1. 10µsec/DIV 0.2V/DIV

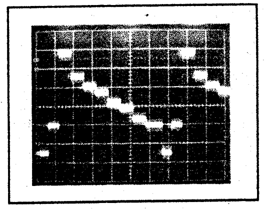

2. 10µsec/DIV 0.2V/DIV

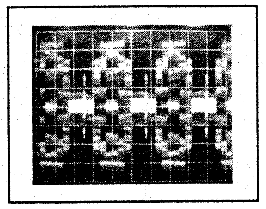

3. 10µsec/DIV 0.1V/DIV

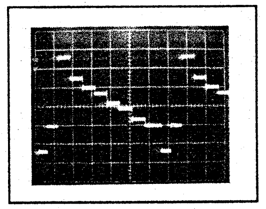

4. 10µsec/DIV 0.2V/DIV

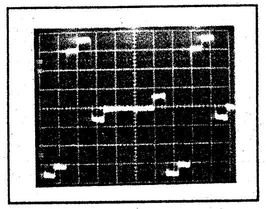

5. 10µsec/DIV 0.5V/DIV

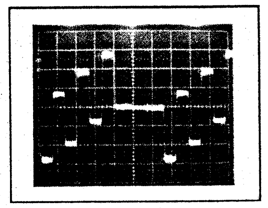

6. 0.1µsec/DIV 1V/DIV

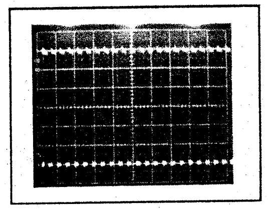

7. 10µsec/DIV 0.2V/DIV

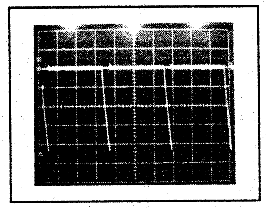

8. 20µsec/DIV 0.1V/DIV


9. 10µsec/DIV 0.5V/DIV


10. 10µsec/DIV 0.2V/DIV


11. 10µsec/DIV 0.2V/DIV


12. 0.5µsec/DIV 0.1V/DIV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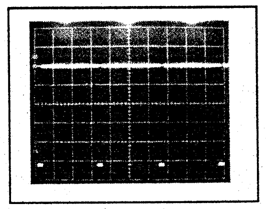
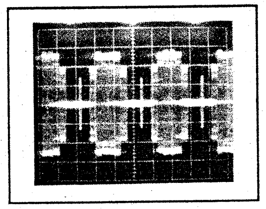
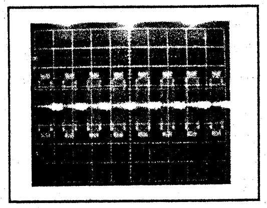
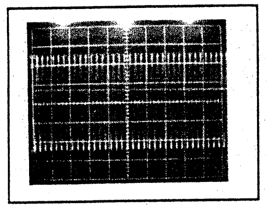
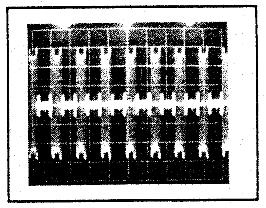
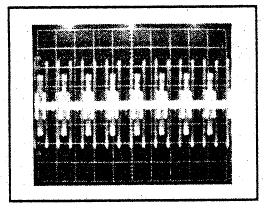

14. 20µsec/DIV 0.1V/DIV

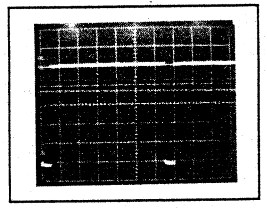

15. 20µsec/DIV 0.1V/DIV

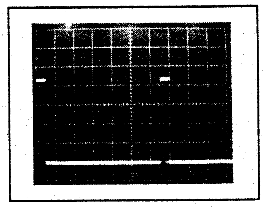

16. 50µsec/DIV 50mV/DIV


17. 0.2µsec/DIV 0.1V/DIV


18. 50µsec/DIV 50mV/DIV


19. 50µsec/DIV 50mV/DIV


20. 10µsec/DIV 1V/DIV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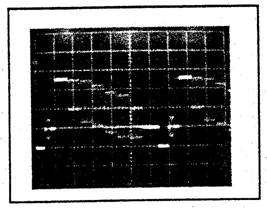
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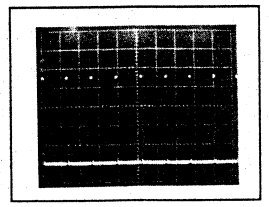
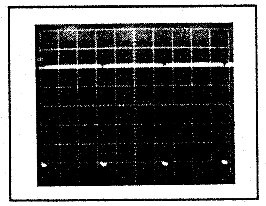

23. 50µsec/DIV 1V/DIV

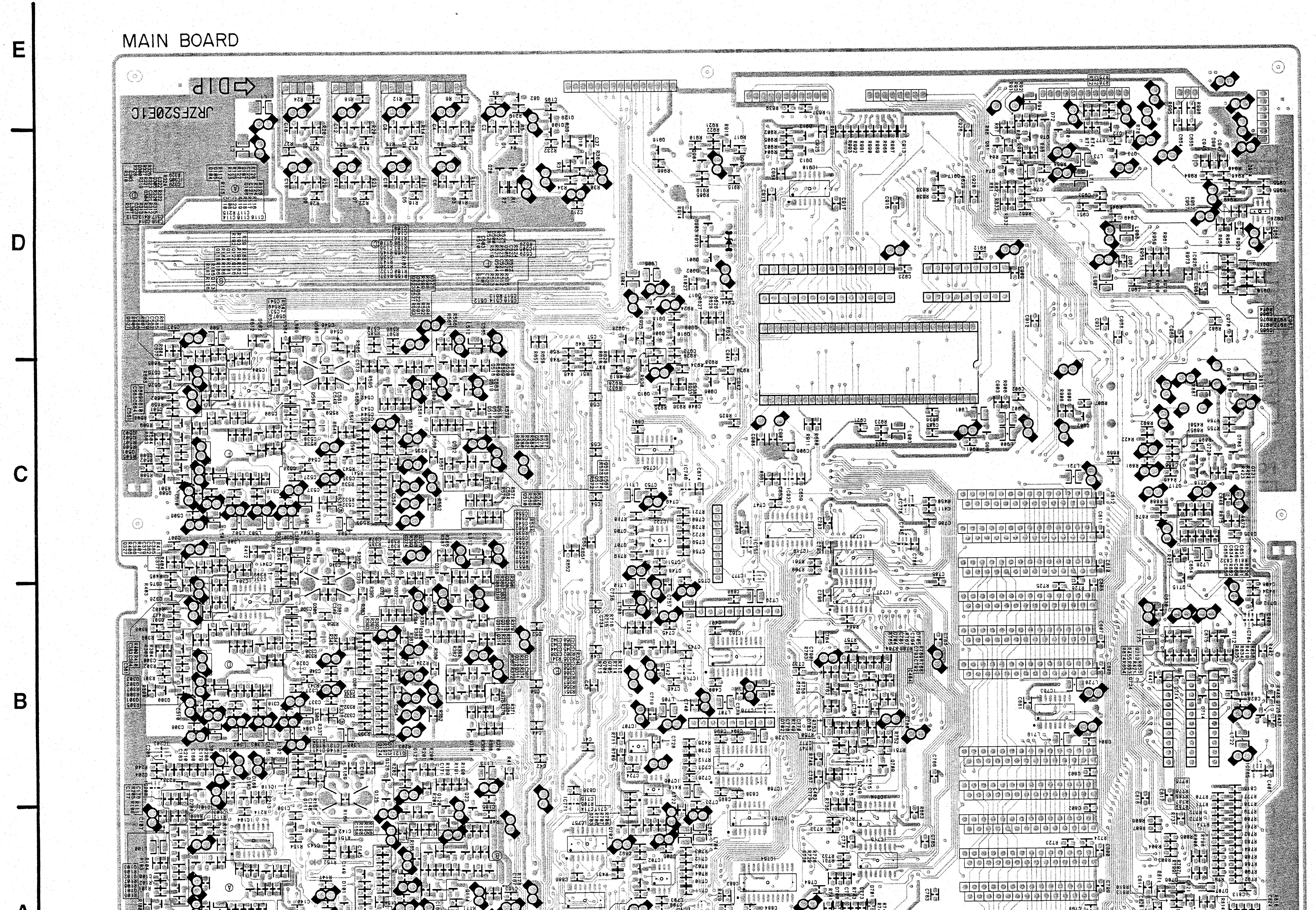

24. 20µsec/DIV 1V/DIV

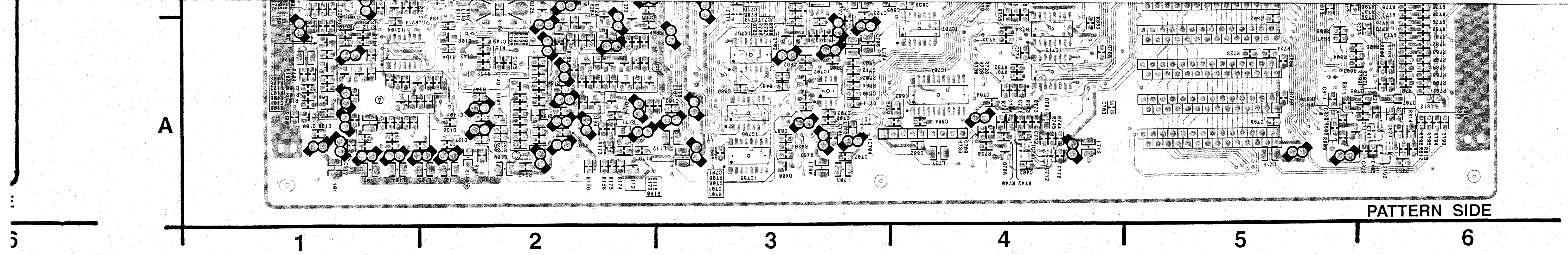
MAIN BOARD

	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC11	IC12	IC13	IC14	IC15	IC16	IC17	IC18	IC19	IC20	IC102	IC103	IC104
Pin 1	0.2	-0.1	-0.1	-0.1	-0.1	-0.1	4.9	0	4.9	0	0	4.2	4.6	0	4.2	5.1	5.1	5.1	5.0	5.1	0.1	5.0	0
2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	1.6	1.9	0	7.36	4.6	0	4.36	0	0	0	0	5.1	5.0	2.5	0
3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.4	0.4	1.4	1.5	0	4.2	4.6	0	4.2	0	5.1	0	5.1	5.1	5.0	2.4	5.0
4	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	0.2	-	0	0	4.2	-4.9	0	0	0	0	0	5.0	0	0	0	2.9
5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-	0.6	0	4.3	0.6	0	4.3	0	5.1	0	0	5.1	5.0	2.3	0
6	0	0	0	0	0	0	-	0	1.5	-	0	0	0.6	0	0	5.1	0	5.1	5.1	0	0	5.0	5.0
7	-4.8	-4.8	-4.8	-4.8	-4.8	-4.8	0	0.4	2.8	0	-4.9	-4.9	0.6	-4.9	--4.9	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0.3	0	4.9	0	0	5.1	0	0	0	0	0	5.1	5.1	0	2.5	5.9
9	0	0	0	0	0	1.6	5.1	4.9	5.1		0	0		0	0	0	0	0	5.0	5.1	4.2	5.0	2.9
10	4.9	0	4.9	4.9	0	2.8	0	0	1.4		0	0		0	0	5.1	0	0	5.1	5.1	5.0	2.4	2.9
11	0	0	0	0	4.9	1.4	0.3	5.1	1.4		4.0	4.1		0	0	0	5.1	5.1	0	5.1	1.0	0	5.0
12	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-		4.0	4.1		4.0	4.1	0	0	0	0	0	0	5.0	5.0
13	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	0.3	4.9		4.0	4.1		4.0	4.1	5.1	0	5.1	0	0	5.0	5.0	0
14	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.8	0.3	0		4.0	4.1		4.1	4.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	5.0
15	0.5	0.5	0.5	0.5	0.5	-0.1	0	1.8	4.9		4.1	4.1		4.0	4.1								
16	4.9	4.9	4.9	4.9	4.9	4.9	4.9	0	4.9		5.1	5.1		5.1	5.1								
17								4.9															
18								0.8															
19								0															
20								4.9															

	IC105	IC108	IC109	IC110	IC200	IC201	IC202	IC203	IC204	IC302	IC304	IC305	IC308	IC309	IC310	IC502	IC503	IC504	IC505	IC508	IC509	IC510
Pin 1	-02.4	0	2.7	0	5.0	0	5.0	0	-	0.1	5.0	-02.4	0	0	0	0.1	5.0	0	-02.5	0	0	0
2	0	5.0	2.2	0	0	0	5.0	0	0	5.0	2.4	0	5.0	5.0	0	5.0	2.4	0	0	5.0	5.0	0
3	2.4	5.0	2.4	0	0	0	0	0	0	5.0	2.4	2.4	5.0	0	0	5.0	2.4	5.0	2.4	5.0	0	0
4	5.0	0	0	5.0	0	0	5.0	0	5.0	0	0	5.0	0	0	5.0	0	0	2.9	5.0	0	0	5.0
5		5.0	4.2	5.0	5.0	5.0	5.0	0	5.0	0	2.3		5.0	5.0	5.0	0	2.2	0		5.0	5.0	5.0
6		0	2.6					0.7		5.0	5.0		0			5.0	5.0	5.0		0		
7		5.0	2.0					0		0	0		5.0			0	0	0		5.0		
8		0	0					5.0		0	2.4		0			0	2.4	2.9		0		
9		5.0	4.9							5.0	5.0		5.0			5.0	5.0			5.0		
10		0	4.4							0	2.4		0			0	2.4			0		
11		5.0	0							5.0	0		5.0			5.0	0			5.0		
12		0	5.0							5.0	5.0		0			5.0	5.0			0		
13		5.0	0							0	5.0		5.0			0	5.0			5.0		
14		5.0	4.4							5.0	5.0		5.0			5.0	5.0			5.0		
15		0	5.0										0							0		
16		5.0	0.7										5.0							5.0		
17																						
18																						
19																						
20																						

ONDUCTOR VIEW OF MAIN BOARD


E
D
C
B
A
MAIN BOARD
DIP
JRZFS20E1C



9	IC20	IC102	IC103	IC104
)	5.1	0.1	5.0	0
	5.1	5.0	2.5	0
1	5.1	5.0	2.4	5.0
)	0	0	0	2.9
	5.1	5.0	2.3	0
1	0	0	5.0	5.0
	0	0	0	0
1	5.1	0	2.5	5.9
)	5.1	4.2	5.0	2.9
1	5.1	5.0	2.4	2.9
	5.1	1.0	0	5.0
	0	0	5.0	5.0
	0	5.0	5.0	0
1	5.1	5.0	5.0	5.0

05	IC508	IC509	IC510
.5	0	0	0
	5.0	5.0	0
4	5.0	0	0
)	0	0	5.0
	5.0	5.0	5.0
	0		
	5.0		
	0		
	5.0		
	0		
	5.0		
	0		
	5.0		
	5.0		
	0		
	5.0		

MAIN BOARD

	IC106	IC306	IC506
Pin 1	0.2	0.2	0.2
2	3.5	3.6	3.6
3	2.3	2.3	2.3
4	2.4	2.5	2.5
5	2.9	3.0	3.0
6	2.9	3.0	3.0
7	3.7	3.7	3.7
8	3.0	3.0	3.0
9	2.9	2.9	2.9
10	2.8	2.8	2.8
11	2.2	2.4	2.5
12	3.3	3.3	3.3
13	0	0	0
14	2.9	2.9	2.9
15	5.0	5.0	5.0
16	2.9	2.9	2.9
17	0	0	0
18	4.2	4.2	4.2
19	2.1	2.1	2.1
20	2.1	2.1	2.1
21	-	-	1.0
22	2.7	2.7	2.8
23	5.0	5.0	5.0
24	5.0	5.0	5.0
25	2.9	2.9	2.9
26	2.5	2.5	2.5
27	2.5	2.5	2.5
28	0.1	0.1	0.1

	IC101	IC301	IC501
Pin 1	0	0	0
2	5.0	5.0	5.0
3	0	0	0
4	0.4	0.4	0.4
5	1.5	1.5	1.6
6	0	0	0
7	5.0	5.0	5.0
8	1.0	1.0	1.0
9	0	0	0
10	1.2	1.2	1.2
11	0	0	0
12	5.0	5.0	5.0
13	4.7	4.7	4.7
14	1.5	0.5	0.5
15	3.0	2.9	2.9
16	1.6	0.6	1.6
17	1.4	0.6	1.6
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0.8	0	0
27	0.8	0	0
28	0	0	0
29	5.0	5.0	5.0
30	0	0	0
31	0	0	0
32	0.8	0	0
33	0	0	0
34	0	0	0
35	0	0	0
36	0	0	0
37	0	0	0
38	0	0	0
39	0	0	0
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	5.0	5.0	5.0
45	2.4	2.4	2.4
46	0	0	0
47	0	0	0
48	0	0	0

	B	C	E
Q1	1.1	4.9	0.6
2	0.6	4.9	-0.1
3	1.1	4.9	0.6
4	0.6	4.9	-0.1
5	1.1	4.9	0.6
6	0.6	4.9	-0.1
7	1.1	4.9	0.6
8	0.6	4.9	-03.1
9	1.1	4.9	0.6
10	0.6	4.9	-0.1
11	1.1	4.9	0.6
12	0.6	4.9	-0.1
13	1.1	4.9	0.6
14	0.6	4.9	-0.1
15	1.1	4.9	0.6
16	0.6	4.9	-0.1
17	1.1	4.9	0.6
18	0.6	4.9	-0.1
19	0.5	0	1.1
20	0	0	0.5
21	2.2	0	2.8
22	4.6	5.0	3.9
23	4.7	4.9	4.0
24	4.9	5.0	4.2
82	0	-4.6	0.6
83	0	-4.8	0.6
84	0	-4.8	0.6
85	0	-4.8	0.6
86	0	-4.8	0.6
87	0	-4.8	0.6
88	0	-4.8	0.6
89	0	-4.8	0.6
90	0	4.9	-0.7
91	-0.6	2.2	-0.6
92	0	-4.6	0.6
100	0	0.7	-0.7
101	1.0	5.0	0.4
102	-1.5	5.0	-2.1

	B	C	E
Q103	-1.5	5.0	-2.1
104	0.4	5.0	-0.3
105	1.6	5.0	1.0
106	2.7	5.0	2.1
110	5.0	3.7	5.0
111	2.2	3.3	1.6
112	0	4.9	-0.6
113	0	2.2	-0.6
114	2.2	4.9	1.6
115	0	4.0	0.6
116	3.9	0	4.7
117	4.6	4.9	4.0
118	0	2.6	-0.6
119	2.3	4.9	1.7
120	0	4.0	1.6
121	0	2.0	-0.6
122	4.7	4.9	4.0
123	0	2.0	-0.6
124	3.0	4.9	2.4
125	0	4.1	1.6
126	4.1	0	4.9
127	4.9	4.9	4.2
129	1.1	4.9	0.8
130	0.8	4.9	0.2
300	-0.1	5.0	-0.7
301	0	0.7	-0.7
302	1.0	5.0	0.4
303	-1.5	5.0	-2.1
304	0.4	5.0	-0.3
305	1.6	5.0	1.0
306	2.7	5.0	2.1
310	5.0	3.7	5.0
311	2.2	3.3	1.6
312	0	4.9	-0.6
313	0	2.2	-0.6
314	2.2	4.9	1.6
315	0	4.0	0.6

	B	C	E
Q316	3.9	0	4.7
317	4.6	4.9	4.0
318	0	2.3	-0.6
319	2.3	4.9	1.7
320	0	4.0	1.6
321	0	2.0	-0.6
322	4.7	4.9	4.0
323	0	2.0	-0.6
324	3.0	4.9	2.4
325	0	4.1	1.6
326	4.1	0	4.9
327	4.9	4.9	4.2
500	-0.1	5.0	-0.7
501	0	0.7	-0.7
502	1.0	5.0	0.4
503	-1.5	5.0	-2.1
504	0.4	5.0	-0.3
505	1.6	5.0	1.0
506	2.7	5.0	2.1
510	5.0	3.7	5.0
511	2.2	3.3	1.6
512	0	4.9	-0.6
513	0	2.2	-0.6
514	2.2	4.9	1.6
515	0	4.0	0.6
516	3.9	0	4.7
517	4.6	4.9	4.0
518	0	2.3	-0.6
519	2.3	4.9	1.7
520	0	4.0	1.6
521	0	2.0	-0.6
522	4.7	4.9	4.0
523	0	2.0	-0.6
524	3.0	4.9	2.4
525	0	4.1	1.6
526	4.1	0	4.9
527	4.9	4.9	4.2

< Index >
Main Board
(Component Side)

IC1	D4
IC2	D4
IC3	D5
IC4	D5
IC5	D6
IC6	D4
IC7	D5
IC8	D5
IC9	D4
IC10	D4
IC11	B4
IC12	B4
IC13	A4
IC14	B4
IC15	B4
IC16	B4/C4
IC17	C4
IC18	C4
IC19	C4
IC20	C4
IC101	A5
IC102	A5
IC103	A5
IC105	A5
IC106	A5
IC108	A6
IC109	B6
IC201	A5
IC203	B5
IC204	A5
IC301	B5
IC302	B5
IC303	B5
IC306	B5
IC308	B5
IC309	B6
IC310	B5
IC501	C5
IC502	C5
IC503	C5
IC506	C5
IC508	C5
IC509	C6
IC510	C5
IC701	A4
IC703	A3
IC705	A4
IC708	A3/B3
IC709	A3
IC710	A2-3/B2-3
IC711	B3
IC716	B4
IC717	B3
IC720	B2-3/C2-3
IC721	B4/C4
IC723	B3/C3
IC724	B3
IC728	A2
IC729	A2
IC730	A2
IC731	A2
IC732	A2
IC734	B2
IC735	B2
IC736	B2
IC737	B2
IC738	C2
IC739	C2
IC740	A1
IC742	C1
IC744	C1
IC748	A3
IC753	A3
IC759	B3
IC761	B3
IC766	A4
IC768	A4
IC769	A4
IC770	B1
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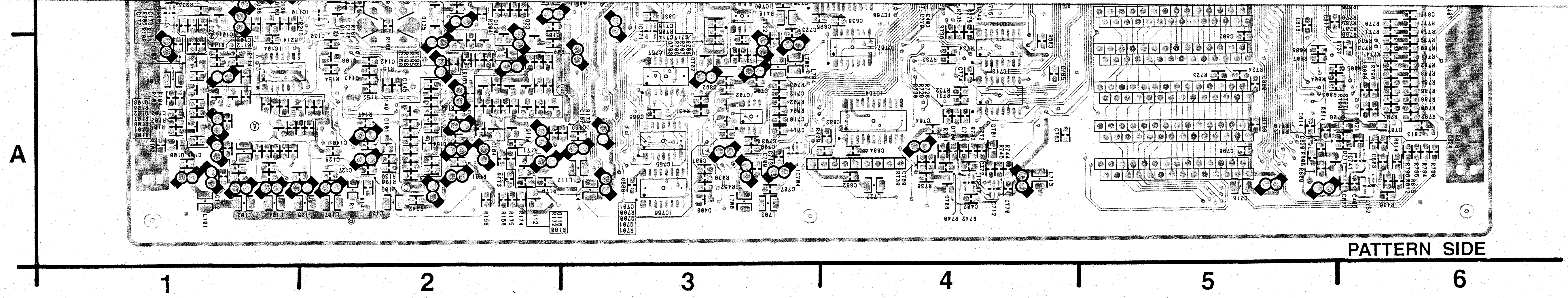
IC902	C2
IC903	C3
IC904	D2
IC905	C2
IC906	D2/D3
IC907	D2/D3
IC908	D3
IC909	D3
IC911	D2
IC912	C3
IC913	D2/D3
IC914	D3
IC915	D2
IC916	D1
IC917	C2
IC918	C3
IC920	D3
IC921	D1
IC923	D2
IC925	D1
IC927	C1
IC928	C1
IC929	C1
IC931	D4
Q1	D4
Q2	D4
Q3	D4
Q4	D4
Q5	D4
Q6	D4
Q7	D5
Q8	D5
Q9	D5
Q10	D5
Q11	D5
Q12	D5
Q13	D5
Q14	D5
Q15	D5
Q16	D5
Q17	D5
Q18	D5
Q21	D2
Q22	A4
Q24	A4
Q70	D2
Q71	D2
Q75	D2
Q76	D2
Q77	D2
Q79	D2
Q80	D2
Q83	D4
Q84	D4
Q85	D3
Q86	D3
Q87	D3
Q88	D3
Q89	D3
Q90	D4
Q91	D4
Q92	D4
Q400	B1
Q719	B6
Q722	B6
Q729	B6
Q905	D3
Q906	D3
Q911	C4
Q912	C3
Q915	D1
D3	D4
D11	D1
D71	D2
D73	D2
D201	A5
D303	C5
D503	C5
D905	C3
D908	D1
D919	A4



9	IC20	IC102	IC103	IC104
)	5.1	0.1	5.0	0
	5.1	5.0	2.5	0
1	5.1	5.0	2.4	5.0
)	0	0	0	2.9
	5.1	5.0	2.3	0
1	0	0	5.0	5.0
	0	0	0	0
1	5.1	0	2.5	5.9
)	5.1	4.2	5.0	2.9
1	5.1	5.0	2.4	2.9
	5.1	1.0	0	5.0
	0	0	5.0	5.0
	0	5.0	5.0	0
1	5.1	5.0	5.0	5.0

05	IC508	IC509	IC510
.5	0	0	0
	5.0	5.0	0
4	5.0	0	0
)	0	0	5.0
	5.0	5.0	5.0
	0		
	5.0		
	0		
	5.0		
	0		
	5.0		
	0		
	5.0		
	5.0		
	0		
	5.0		

MAIN BOARD

	IC106	IC306	IC506
Pin 1	0.2	0.2	0.2
2	3.5	3.6	3.6
3	2.3	2.3	2.3
4	2.4	2.5	2.5
5	2.9	3.0	3.0
6	2.9	3.0	3.0
7	3.7	3.7	3.7
8	3.0	3.0	3.0
9	2.9	2.9	2.9
10	2.8	2.8	2.8
11	2.2	2.4	2.5
12	3.3	3.3	3.3
13	0	0	0
14	2.9	2.9	2.9
15	5.0	5.0	5.0
16	2.9	2.9	2.9
17	0	0	0
18	4.2	4.2	4.2
19	2.1	2.1	2.1
20	2.1	2.1	2.1
21	-	-	1.0
22	2.7	2.7	2.8
23	5.0	5.0	5.0
24	5.0	5.0	5.0
25	2.9	2.9	2.9
26	2.5	2.5	2.5
27	2.5	2.5	2.5
28	0.1	0.1	0.1

	IC101	IC301	IC501
Pin 1	0	0	0
2	5.0	5.0	5.0
3	0	0	0
4	0.4	0.4	0.4
5	1.5	1.5	1.6
6	0	0	0
7	5.0	5.0	5.0
8	1.0	1.0	1.0
9	0	0	0
10	1.2	1.2	1.2
11	0	0	0
12	5.0	5.0	5.0
13	4.7	4.7	4.7
14	1.5	0.5	0.5
15	3.0	2.9	2.9
16	1.6	0.6	1.6
17	1.4	0.6	1.6
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0.8	0	0
27	0.8	0	0
28	0	0	0
29	5.0	5.0	5.0
30	0	0	0
31	0	0	0
32	0.8	0	0
33	0	0	0
34	0	0	0
35	0	0	0
36	0	0	0
37	0	0	0
38	0	0	0
39	0	0	0
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	5.0	5.0	5.0
45	2.4	2.4	2.4
46	0	0	0
47	0	0	0
48	0	0	0

	B	C	E
Q1	1.1	4.9	0.6
2	0.6	4.9	-0.1
3	1.1	4.9	0.6
4	0.6	4.9	-0.1
5	1.1	4.9	0.6
6	0.6	4.9	-0.1
7	1.1	4.9	0.6
8	0.6	4.9	-03.1
9	1.1	4.9	0.6
10	0.6	4.9	-0.1
11	1.1	4.9	0.6
12	0.6	4.9	-0.1
13	1.1	4.9	0.6
14	0.6	4.9	-0.1
15	1.1	4.9	0.6
16	0.6	4.9	-0.1
17	1.1	4.9	0.6
18	0.6	4.9	-0.1
19	0.5	0	1.1
20	0	0	0.5
21	2.2	0	2.8
22	4.6	5.0	3.9
23	4.7	4.9	4.0
24	4.9	5.0	4.2
82	0	-4.6	0.6
83	0	-4.8	0.6
84	0	-4.8	0.6
85	0	-4.8	0.6
86	0	-4.8	0.6
87	0	-4.8	0.6
88	0	-4.8	0.6
89	0	-4.8	0.6
90	0	4.9	-0.7
91	-0.6	2.2	-0.6
92	0	-4.6	0.6
100	0	0.7	-0.7
101	1.0	5.0	0.4
102	-1.5	5.0	-2.1

	B	C	E
Q103	-1.5	5.0	-2.1
104	0.4	5.0	-0.3
105	1.6	5.0	1.0
106	2.7	5.0	2.1
110	5.0	3.7	5.0
111	2.2	3.3	1.6
112	0	4.9	-0.6
113	0	2.2	-0.6
114	2.2	4.9	1.6
115	0	4.0	0.6
116	3.9	0	4.7
117	4.6	4.9	4.0
118	0	2.6	-0.6
119	2.3	4.9	1.7
120	0	4.0	1.6
121	0	2.0	-0.6
122	4.7	4.9	4.0
123	0	2.0	-0.6
124	3.0	4.9	2.4
125	0	4.1	1.6
126	4.1	0	4.9
127	4.9	4.9	4.2
129	1.1	4.9	0.8
130	0.8	4.9	0.2
300	-0.1	5.0	-0.7
301	0	0.7	-0.7
302	1.0	5.0	0.4
303	-1.5	5.0	-2.1
304	0.4	5.0	-0.3
305	1.6	5.0	1.0
306	2.7	5.0	2.1
310	5.0	3.7	5.0
311	2.2	3.3	1.6
312	0	4.9	-0.6
313	0	2.2	-0.6
314	2.2	4.9	1.6
315	0	4.0	0.6

	B	C	E
Q316	3.9	0	4.7
317	4.6	4.9	4.0
318	0	2.3	-0.6
319	2.3	4.9	1.7
320	0	4.0	1.6
321	0	2.0	-0.6
322	4.7	4.9	4.0
323	0	2.0	-0.6
324	3.0	4.9	2.4
325	0	4.1	1.6
326	4.1	0	4.9
327	4.9	4.9	4.2
500	-0.1	5.0	-0.7
501	0	0.7	-0.7
502	1.0	5.0	0.4
503	-1.5	5.0	-2.1
504	0.4	5.0	-0.3
505	1.6	5.0	1.0
506	2.7	5.0	2.1
510	5.0	3.7	5.0
511	2.2	3.3	1.6
512	0	4.9	-0.6
513	0	2.2	-0.6
514	2.2	4.9	1.6
515	0	4.0	0.6
516	3.9	0	4.7
517	4.6	4.9	4.0
518	0	2.3	-0.6
519	2.3	4.9	1.7
520	0	4.0	1.6
521	0	2.0	-0.6
522	4.7	4.9	4.0
523	0	2.0	-0.6
524	3.0	4.9	2.4
525	0	4.1	1.6
526	4.1	0	4.9
527	4.9	4.9	4.2

< Index >
Main Board
(Component Side)

IC1	D4
IC2	D4
IC3	D5
IC4	D5
IC5	D6
IC6	D4
IC7	D5
IC8	D5
IC9	D4
IC10	D4
IC11	B4
IC12	B4
IC13	A4
IC14	B4
IC15	B4
IC16	B4/C4
IC17	C4
IC18	C4
IC19	C4
IC20	C4
IC101	A5
IC102	A5
IC103	A5
IC105	A5
IC106	A5
IC108	A6
IC109	B6
IC201	A5
IC203	B5
IC204	A5
IC301	B5
IC302	B5
IC303	B5
IC306	B5
IC308	B5
IC309	B6
IC310	B5
IC501	C5
IC502	C5
IC503	C5
IC506	C5
IC508	C5
IC509	C6
IC510	C5
IC701	A4
IC703	A3
IC705	A4
IC708	A3/B3
IC709	A3
IC710	A2-3/B2-3
IC711	B3
IC716	B4
IC717	B3
IC720	B2-3/C2-3
IC721	B4/C4
IC723	B3/C3
IC724	B3
IC728	A2
IC729	A2
IC730	A2
IC731	A2
IC732	A2
IC734	B2
IC735	B2
IC736	B2
IC737	B2
IC738	C2
IC739	C2
IC740	A1
IC742	C1
IC744	C1
IC748	A3
IC753	A3
IC759	B3
IC761	B3
IC766	A4
IC768	A4
IC769	A4
IC770	B1
IC773	D2
IC774	D2
IC775	A3
IC901	C2/C3
IC902	C2
IC903	C3
IC904	D2
IC905	C2
IC906	D2/D3
IC907	D2/D3
IC908	D3
IC909	D3
IC911	D2
IC912	C3
IC913	D2/D3
IC914	D3
IC915	D2
IC916	D1
IC917	C2
IC918	C3
IC920	D3
IC921	D1
IC923	D2
IC925	D1
IC927	C1
IC928	C1
IC929	C1
IC931	D4
Q1	D4
Q2	D4
Q3	D4
Q4	D4
Q5	D4
Q6	D4
Q7	D5
Q8	D5
Q9	D5
Q10	D5
Q11	D5
Q12	D5
Q13	D5
Q14	D5
Q15	D5
Q16	D5
Q17	D5
Q18	D5
Q21	D2
Q22	A4
Q24	A4
Q70	D2
Q71	D2
Q75	D2
Q76	D2
Q77	D2
Q79	D2
Q80	D2
Q83	D4
Q84	D4
Q85	D3
Q86	D3
Q87	D3
Q88	D3
Q89	D3
Q90	D4
Q91	D4
Q92	D4
Q400	B1
Q719	B6
Q722	B6
Q729	B6
Q905	D3
Q906	D3
Q911	C4
Q912	C3
Q915	D1
D3	D4
D11	D1
D71	D2
D73	D2
D201	A5
D303	C5
D503	C5
D905	C3
D908	D1
D919	A4

Power Board

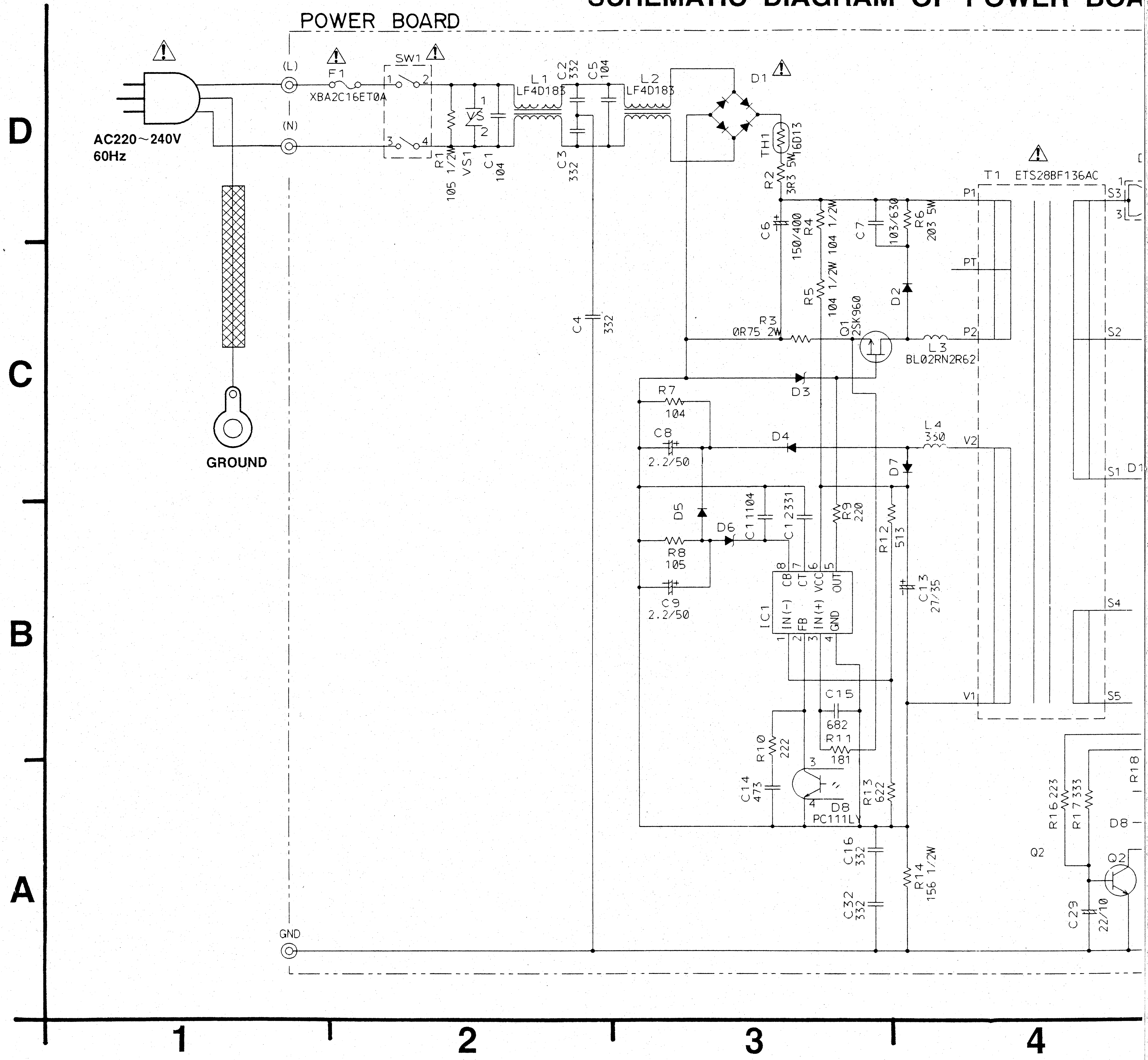
	NTSC	PAL
T1	ETS28BF125AC	ETS28BF136AC
F1	125V 3.15A	250V T1.6AL
Q1	2SK897	2SK960
R2	1.5 Ω 5W	3.3 Ω 5W
R3	0.39 Ω 2W	0.75 Ω 2W
R5	Jumper	100k Ω 1/2W
R12	91k Ω 1/4W	51k Ω 1/4W
R13	10k Ω 1/4W	6.2k Ω 1/4W
C6	680µF 200V	150µF 400V
C12	560pF 50V	330pF 50V
C30	0.1µF 50V	0.022µF 50V
L1	LF4D502	LF4D183
L2	LF4D502	LF4D183

POWER BOARD

	IC1	IC2	IC3
Pin 1	1.4	-5.0	2.5
2	0.5	-9.0	0
3	-	0	4.1
4	0		
5	1.9		
6	5.7		
7	1.6		
8	1.8		

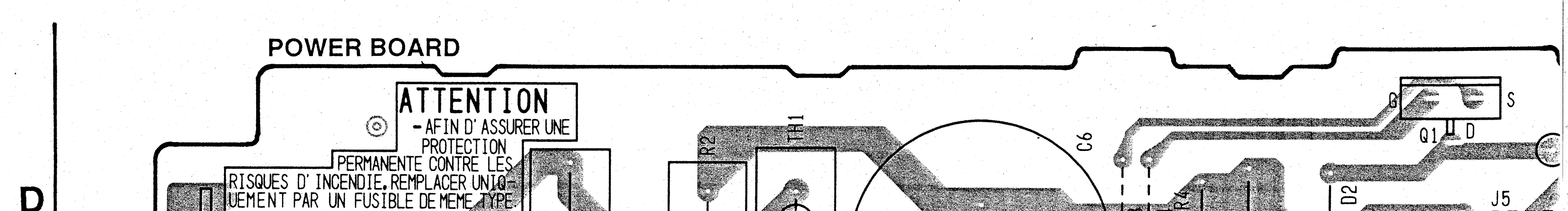
	B	C	E
Q1	(G)0.8	(D) -	(S) -
2	-0.5	4.1	0

SCHEMATIC DIAGRAM OF POWER BOA



POWER BOARD
AC220～240V
60Hz
GROUND
(L)
(N)
GND
F1
XBA2C16ET0A
SW1
VS1
R1
105 1/2W
C1
104
L1
LF4D183
C2
352
C3
352
C5
104
L2
LF4D183
C4
332
D1
TH1
16D13
R2
3R3 5W
C6
150/400
R4
104 1/2W
R5
104 1/2W
C7
103/630
R6
203 5W
D2
R3
0R75 2W
Q1
2SK960
L3
BL02RN2R62
T1 ETS28BF136AC
P1
PT
P2
S1
S2
S3
S4
S5
V1
V2
R7
104
D3
C8
2.2/50
D4
L4
330
D7
D5
D6
C11
104
C12
331
R9
220
R12
513
R8
105
C9
2.2/50
C13
27/35
IC1
CB
CT
VCC
OUT
IN(-)
FB
IN(+)
GND
C15
682
R11
181
R10
222
C14
473
D8
PC111L
R13
622
C16
332
C32
332
R14
156 1/2W
R16 223
R17 333
R18
D8
Q2
C29
22/10
D
C
B
A
1
2
3
4

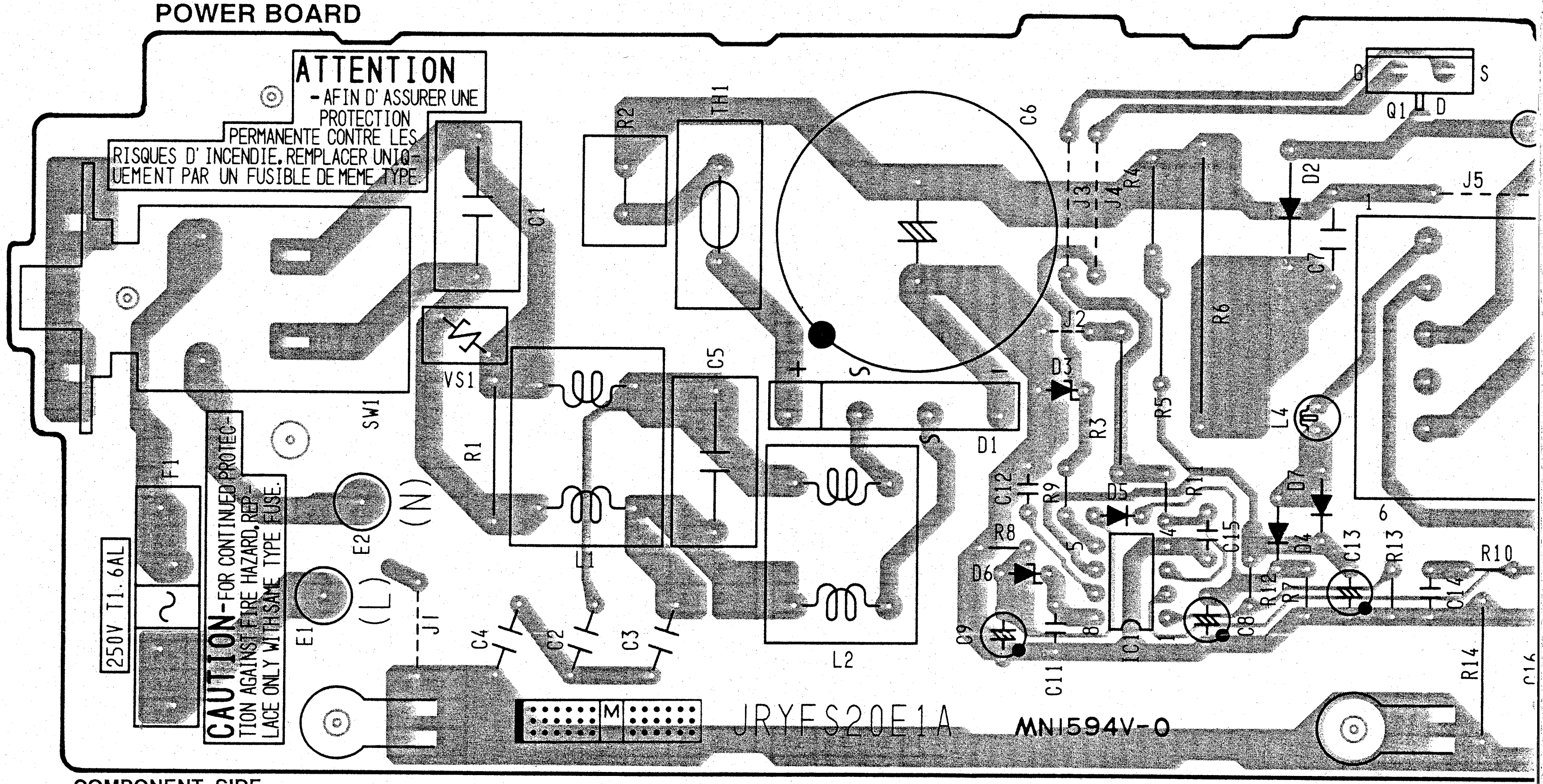
CONDUCTOR VIEW OF POWER BOARD



POWER BOARD
D
ATTENTION
- AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D' INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE
R2
TH1
C6
Q1
B
S
D
R4
D2
J5

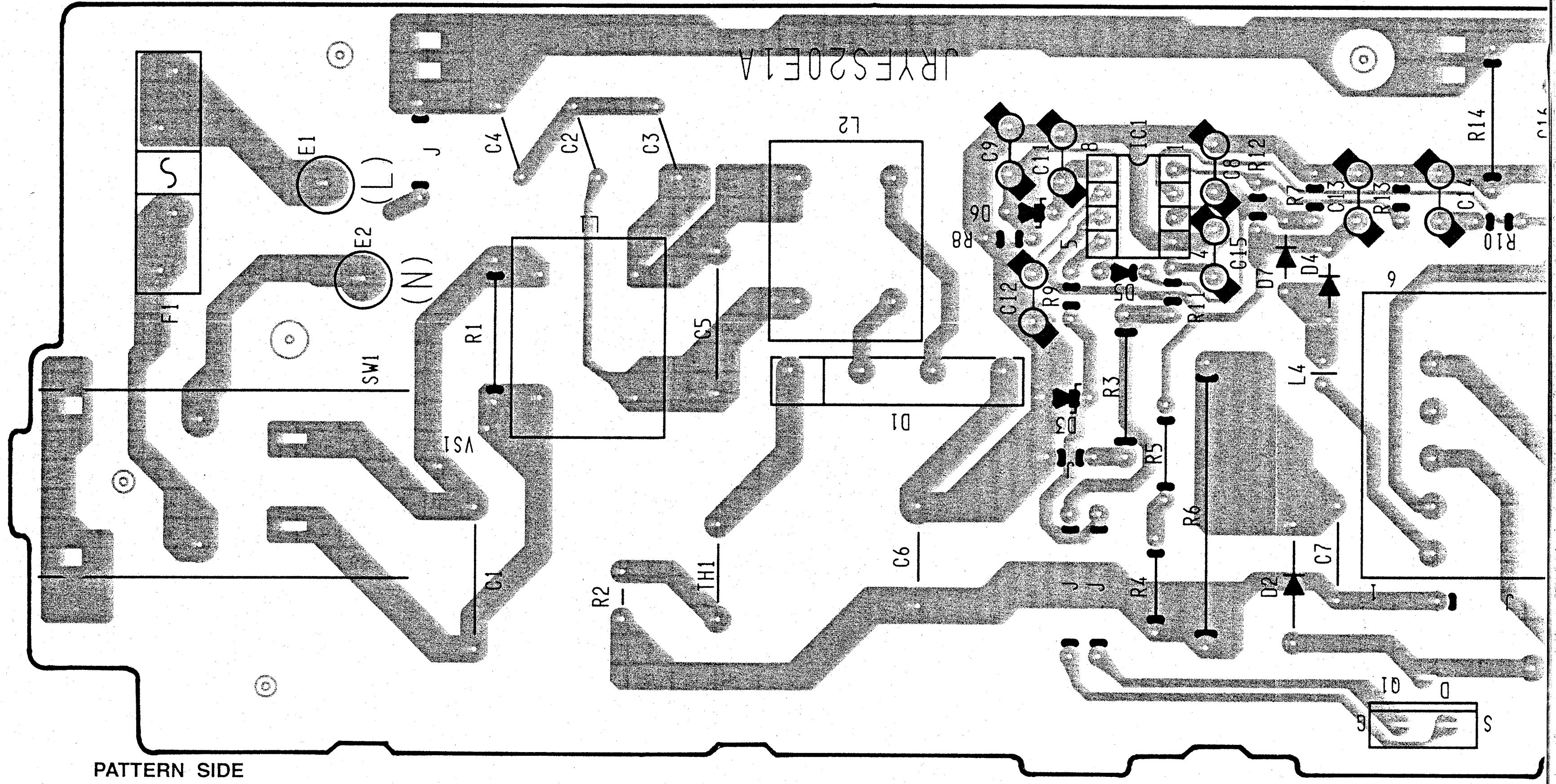
CONDUCTOR VIEW OF POWER BOARD

POWER BOARD


ATTENTION
- AFIN D' ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D' INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE.
CAUTION - FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE FUSE.
250V T1.6AL
F1
SW1
E1
E2
(L)
(N)
J1
VS1
R1
C1
C2
C3
C4
C5
C6
R2
TH1
L1
L2
D1
J3
J4
R4
D2
J5
C7
R6
L2
D3
R3
R5
L4
C12
R9
D5
R11
D7
R8
D6
C15
D4
C13
R13
R10
C9
C11
IC1
C8
R12
R7
C14
R14
Q1
G
S
D
M
JRYFS20E1A
MN1594V-0

COMPONENT SIDE

POWER BOARD


JRYFS20E1A
E1
E2
(L)
(N)
J
F1
SW1
VS1
R1
C1
C2
C3
C4
C5
C6
L1
L2
D1
R2
TH1
C9
C11
IC1
C8
R12
R7
C13
R13
C14
R10
R14
D6
R8
C12
R9
D5
R11
C15
D7
D4
L4
D3
R3
R5
R6
C7
D2
R4
J
Q1
G
D
S

PATTERN SIDE

D

C

B

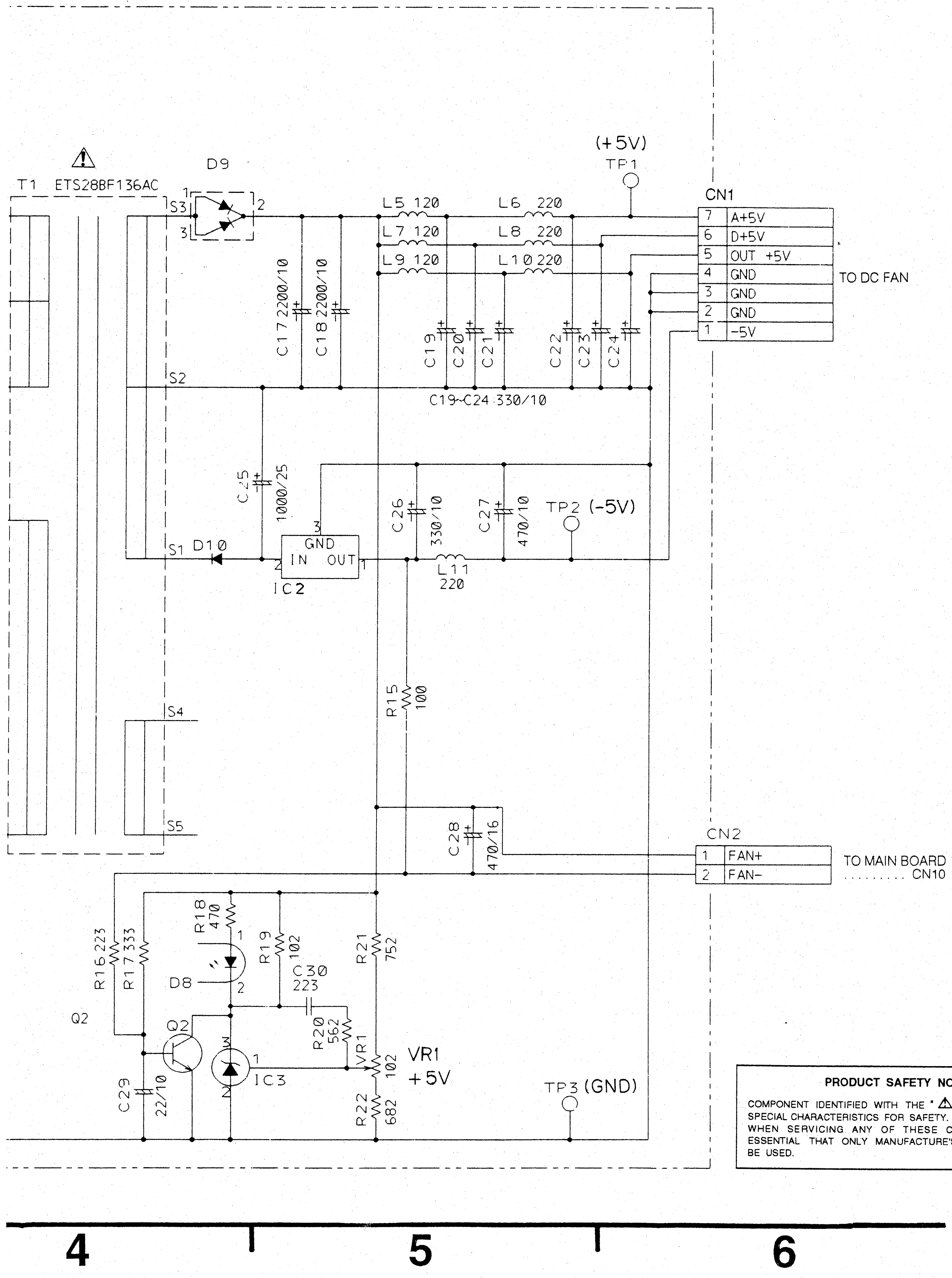
A

1

2

3

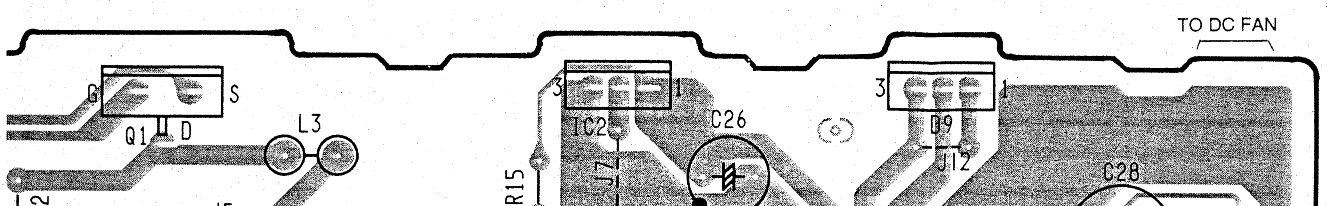
OWER BOARD


T1 ETS28BF136AC
D9
(+5V)
TP1
CN1
L5 120
L6 220
L7 120
L8 220
L9 120
L10 220
7 A+5V
6 D+5V
5 OUT +5V
4 GND
3 GND
2 GND
1 -5V
TO DC FAN
C17 2200/10
C18 2200/10
C19 C20 C21 C22 C23 C24
C19~C24 330/10
S3
S2
S1
S4
S5
D10
C25 1000/25
IC2
GND
IN OUT
C26 330/10
C27 470/10
TP2 (-5V)
L11 220
R15 100
C28 470/16
CN2
1 FAN+
2 FAN-
TO MAIN BOARD CN10
R16 223
R17 333
R18 470
R19 102
D8
Q2
C30 223
R20 562
R21 752
VR1 102
VR1 +5V
R22 682
IC3
C29 22/10
TP3 (GND)
4
5
6

PRODUCT SAFETY NOTICE

COMPONENT IDENTIFIED WITH THE "⚠" MARK HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN SERVICING ANY OF THESE COMPONENTS, IT IS ESSENTIAL THAT ONLY MANUFACTURE'S SPECIFIED PARTS BE USED.

VER BOARD


TO DC FAN
G
S
Q1
D
L3
IC2
C26
D9
J12
C28
R15
3
1

< Index >
Power Board
(Schematic Diagram)

IC1	B3/B4
IC2	B5/C5
IC3	A5
Q1	A5
Q2	A5
D1	D3
D2	C4
D3	C3
D4	C4
D5	B3
D6	B3
D7	C4
D8	A3/A5
D9	C5
D10	B5

Note: The value indicated in the schematic diagram should be read as follows:

□□□
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

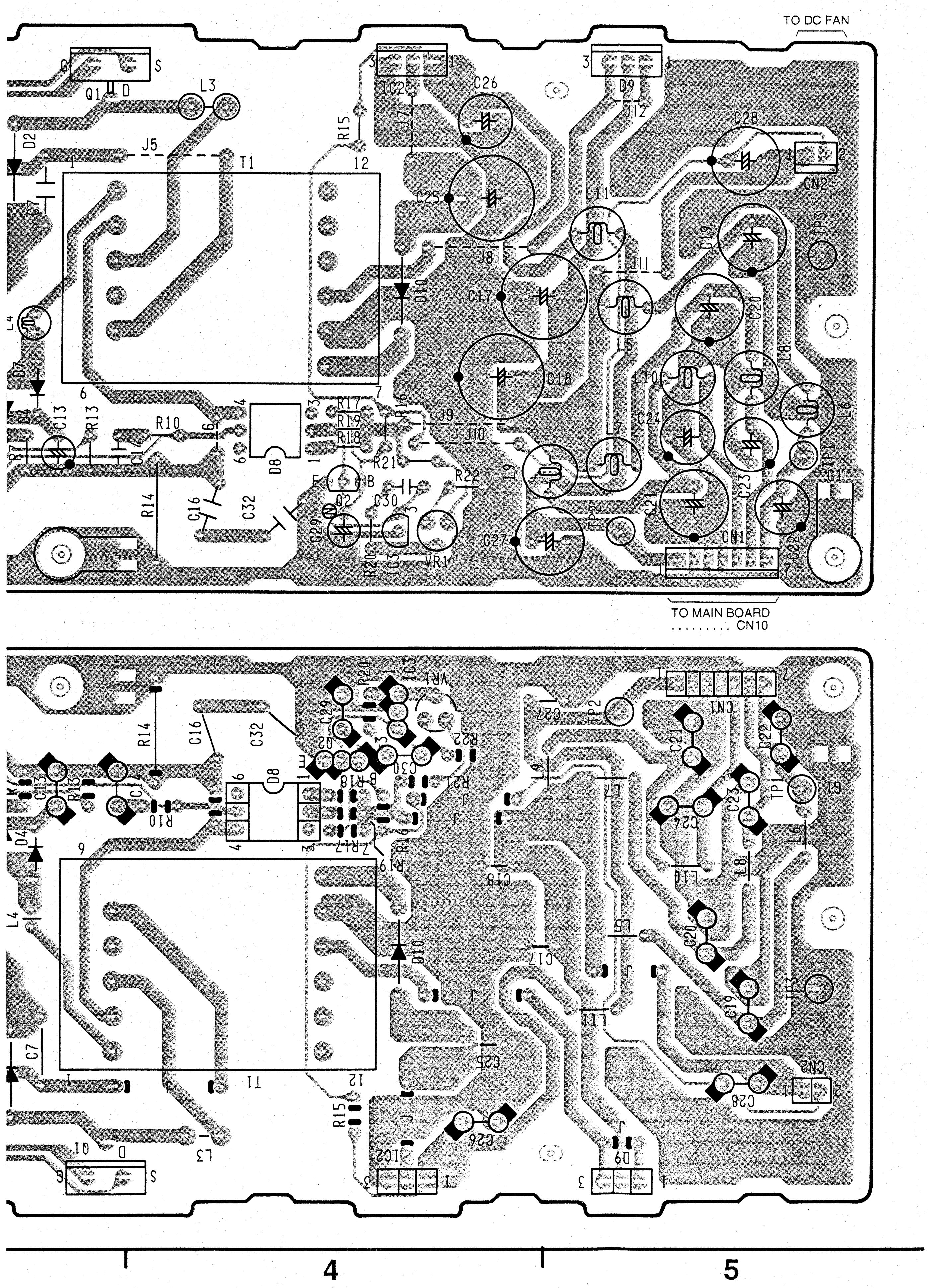
330 → 33×10^0 = 33 Ω
561 → 56×10^1 = 560 Ω
123 → 12×10^3 = 12k Ω
0R00 = 0 Ω

For Capacitor:

820 → 82×10^0 = 82 pF
102 → 10×10^2 = 1000 pF = 0.001 μF
104 → 10×10^4 = 100000 pF = 0.1 μF
The suffix attached to capacitance indicates a type of capacitor.

< Index >
Power Board
(Component Side)

VER BOARD


TO DC FAN
TO MAIN BOARD
.... CN10
Q1
L3
D2
J5
T1
C7
L4
D7
D4
C13
R13
R10
C14
R14
C16
C32
IC2
R15
J7
C26
C25
J8
D10
R17
R19
R18
R16
J9
J10
R21
R22
D8
Q2
C30
C29
R20
IC3
VR1
D9
J12
C28
CN2
L11
C19
TP3
C17
J11
L5
C20
C18
L10
L8
L6
C24
L9
L7
TP1
C23
G1
C21
TP2
C27
CN1
C22
4
5

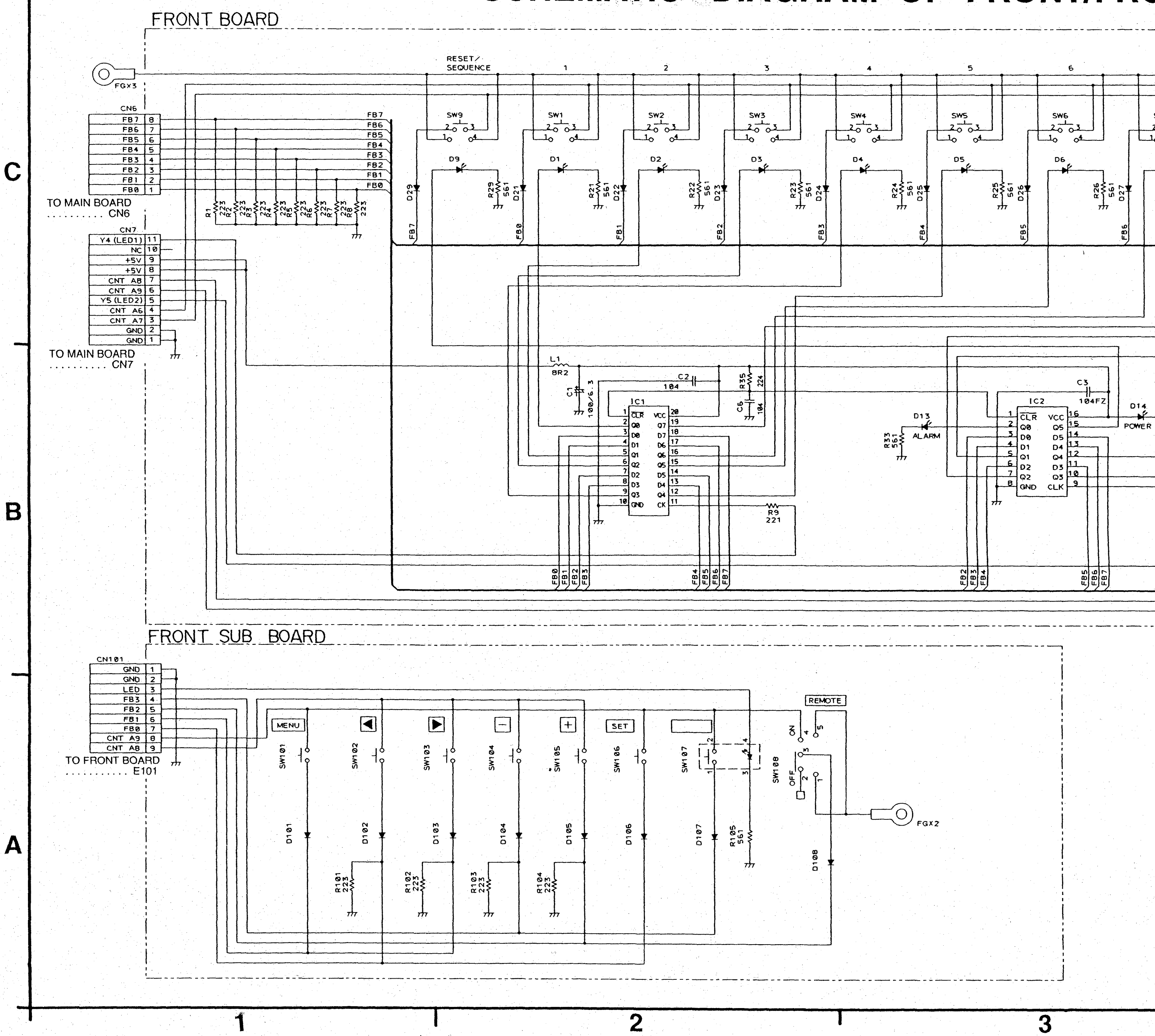
< Index >
Power Board
(Component Side)

IC1	C2
IC2	D4
IC	C4
Q1	D3/D4
Q2	C4
D1	D2/D3
D2	D3
D3	D3
D4	C2
D5	C2
D6	C2
D7	C4
D8	C4
D9	D5
D10	D4

FRONT BOARD

	IC1	IC2
Pin 1	5.0	5.0
2	0	0
3	-	-
4	0.3	0.3
5	0	0
6	0	0.3
7	-	0
8	0.3	0
9	0	5.1
10	0	0
11	5.1	0.3
12	0	0
13	0.3	1.8
14	0.3	1.7
15	0	4.9
16	0	5.1
17	4.8	
18	1.7	
19	0	
20	5.1	

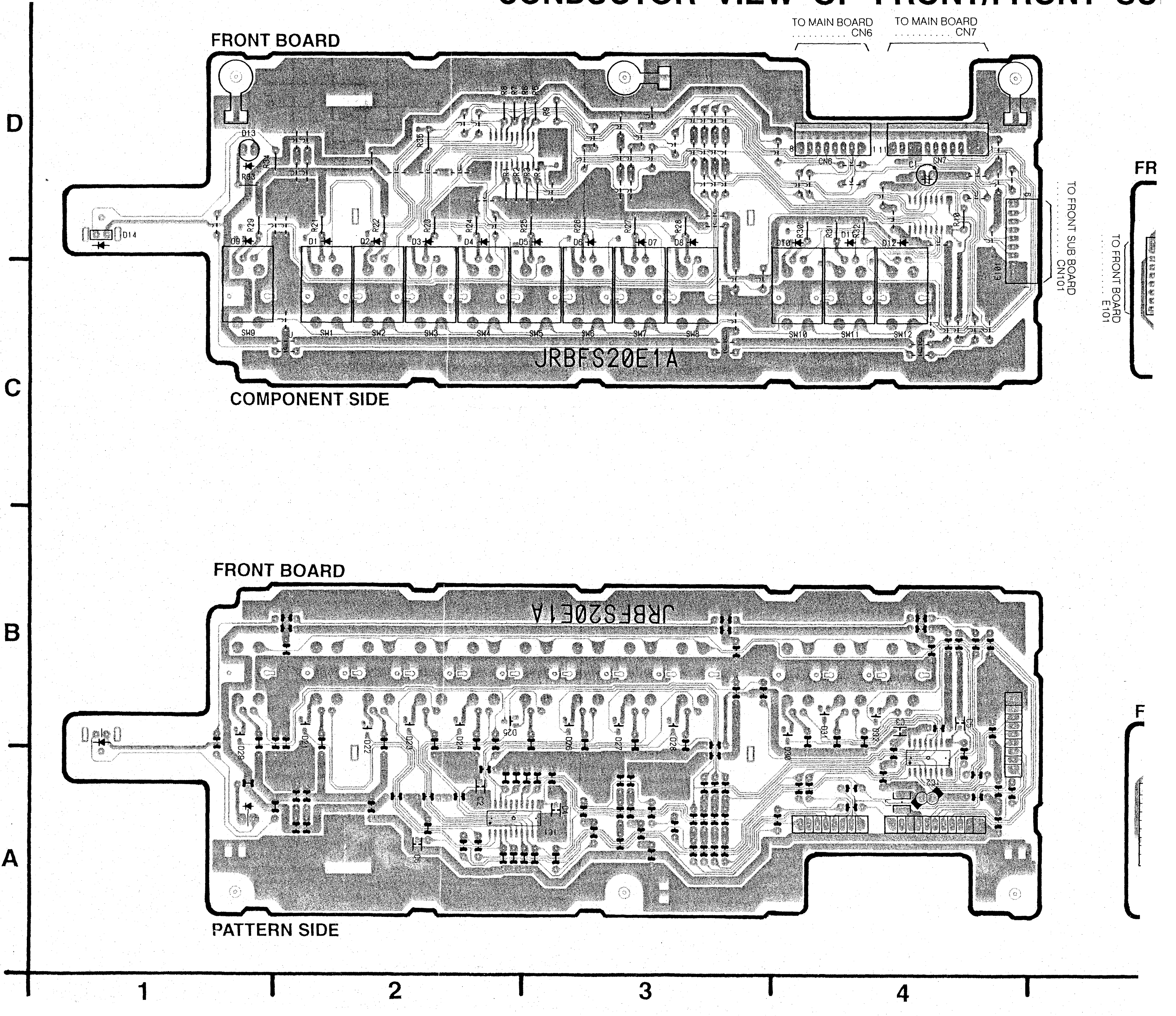
SCHEMATIC DIAGRAM OF FRONT/FRONT S


FRONT BOARD
FRONT SUB BOARD
FGX3
FGX2
CN6
TO MAIN BOARD CN6
CN7
TO MAIN BOARD CN7
CN101
TO FRONT BOARD E101
Y4 (LED1)
NC
+5V
CNT A8
CNT A9
Y5 (LED2)
CNT A6
CNT A7
GND
LED
FB0
FB1
FB2
FB3
FB4
FB5
FB6
FB7
RESET/SEQUENCE
1
2
3
4
5
6
7
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW9
D1
D2
D3
D4
D5
D6
D7
D9
D21
D22
D23
D24
D25
D26
D27
D28
D29
R21
R22
R23
R24
R25
R26
R27
R29
561
R1
R2
R3
R4
R5
R6
R7
R8
223
L1
BR2
C1
100/6.3
C2
104
C6
104
R35
224
R9
221
IC1
CLR
VCC
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
D0
D1
D2
D3
D4
D5
D6
D7
GND
CK
IC2
CLK
C3
104FZ
D13
ALARM
R33
561
D14
POWER
R34
561
MENU
SET
REMOTE
SW101
SW102
SW103
SW104
SW105
SW106
SW107
SW108
OFF
ON
D101
D102
D103
D104
D105
D106
D107
D108
R101
R102
R103
R104
223
R105
561
A
B
C

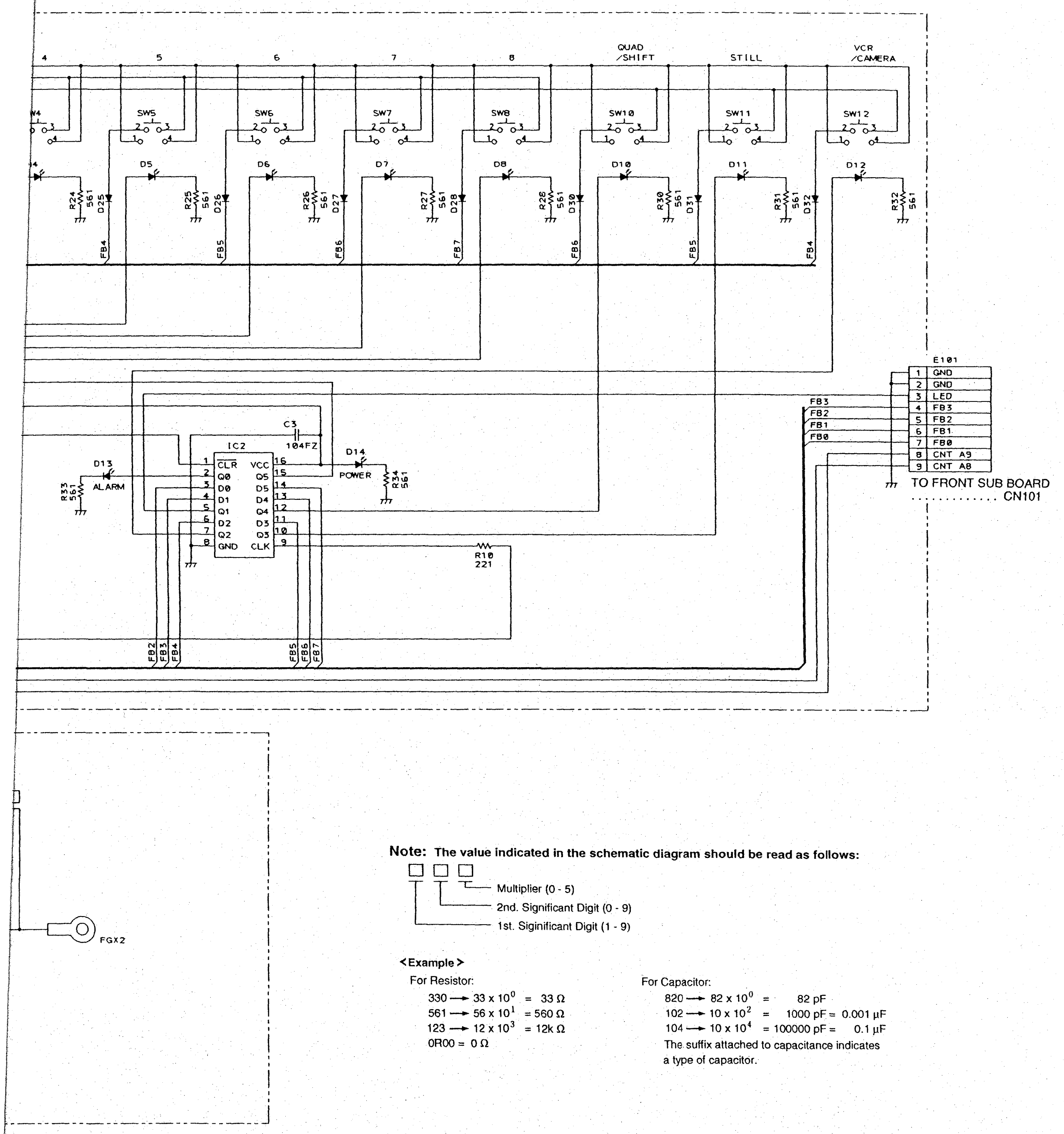
Note: The v

<Example>
For Resistc
330
561
123
0R00

CONDUCTOR VIEW OF FRONT/FRONT SU


FRONT BOARD
COMPONENT SIDE
TO MAIN BOARD CN6
TO MAIN BOARD CN7
TO FRONT SUB BOARD CN101
TO FRONT BOARD E101
JRBFS20E1A
FRONT BOARD
PATTERN SIDE
JRBFS20E1A
D
C
B
A
1
2
3
4
FR
F

M OF FRONT/FRONT SUB BOARD


4
5
6
7
8
QUAD /SHIFT
STILL
VCR /CAMERA
W4
SW5
SW6
SW7
SW8
SW10
SW11
SW12
D5
D6
D7
D8
D10
D11
D12
R24 561
R25 561
R26 561
R27 561
R28 561
R30 561
R31 561
R32 561
D25
D26
D27
D28
D30
D31
D32
FB4
FB5
FB6
FB7
FB6
FB5
FB4
IC2
CLR
Q0
D0
D1
Q1
D2
Q2
GND
VCC
Q5
D5
D4
Q4
D3
Q3
CLK
C3 104FZ
D13 ALARM
R33 561
D14 POWER
R34 561
R10 221
FB2
FB3
FB4
FB5
FB6
FB7
FB3
FB2
FB1
FB0
E101
1 GND
2 GND
3 LED
4 FB3
5 FB2
6 FB1
7 FB0
8 CNT A9
9 CNT A8
TO FRONT SUB BOARD CN101
FGX2

Note: **The value indicated in the schematic diagram should be read as follows:**

□ □ □
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33×10^0 = 33 Ω
561 → 56×10^1 = 560 Ω
123 → 12×10^3 = 12k Ω
0R00 = 0 Ω

For Capacitor:

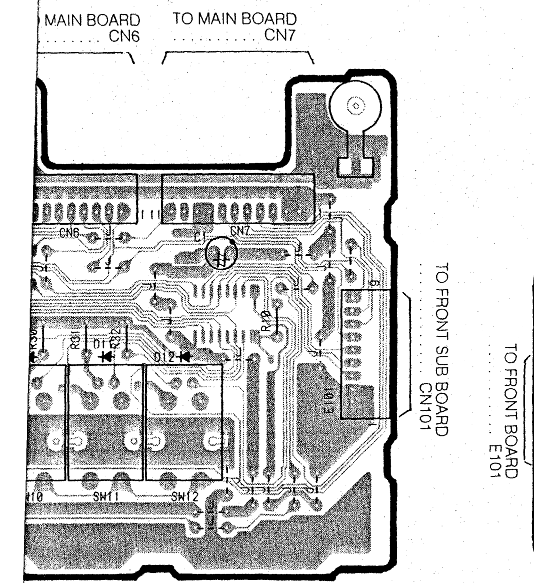
820 → 82×10^0 = 82 pF
102 → 10×10^2 = 1000 pF = 0.001 μF
104 → 10×10^4 = 100000 pF = 0.1 μF

The suffix attached to capacitance indicates a type of capacitor.

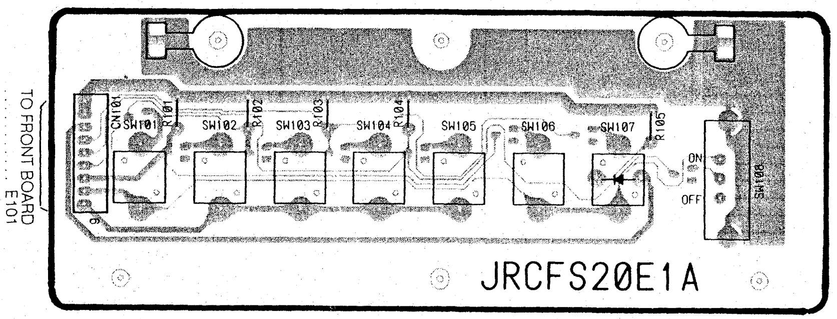
3

4

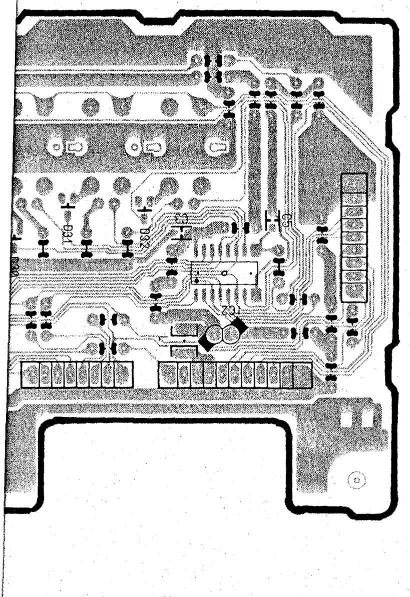
OF FRONT/FRONT SUB BOARD


MAIN BOARD CN6
TO MAIN BOARD CN7
CN6
CN7
C1
R10
R30
R31
R32
D11
D12
SW10
SW11
SW12
E101
TO FRONT SUB BOARD CN101

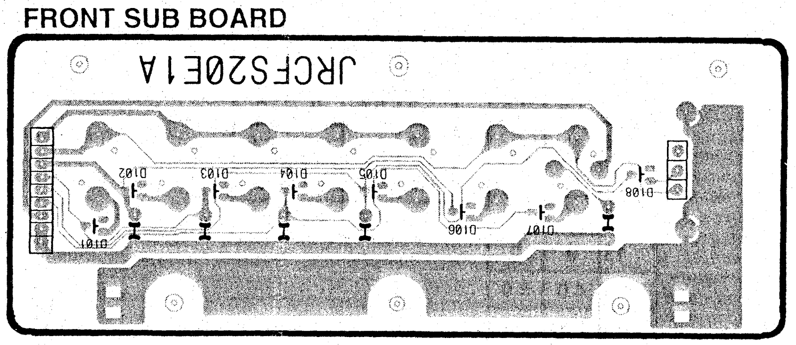
FRONT SUB BOARD


TO FRONT BOARD E101
CN101
SH101
R101
SH102
R102
SH103
R103
SH104
R104
SH105
SH106
SH107
R105
ON
OFF
SH108
JRCFS20E1A

COMPONENT SIDE



FRONT SUB BOARD


JRCFS20E1A
D102
D103
D104
D105
D106
D107
D101
D108

PATTERN SIDE

4

5

6

< Index >
Front Board
(Schematic Diagram)

IC1	B2
IC2	B3
D1	C2
D2	C2
D3	C2
D4	C3
D5	C3
D6	C3
D7	D3
D8	D3
D9	C2
D10	C4
D11	C4
D12	C4
D13	B3
D14	B3
D21	C2
D22	C2
D23	C2
D24	C2
D25	C3
D26	C3
D27	C3
D28	C3
D29	C2
D30	C4
D31	C4
D32	C4

< Index >
Front Sub Board
(Schematic Diagram)

D101	A1
D102	A1
D103	A2
D104	A2
D105	A2
D106	A2
D107	A2
D108	A2

< Index >
Front Board
(Component Side)

D1	D2
D2	D2
D3	D2
D4	D2
D5	D3
D6	D3
D7	D3
D8	D3
D9	D1
D10	D4
D11	D4
D12	D4
D13	D1
D14	D1

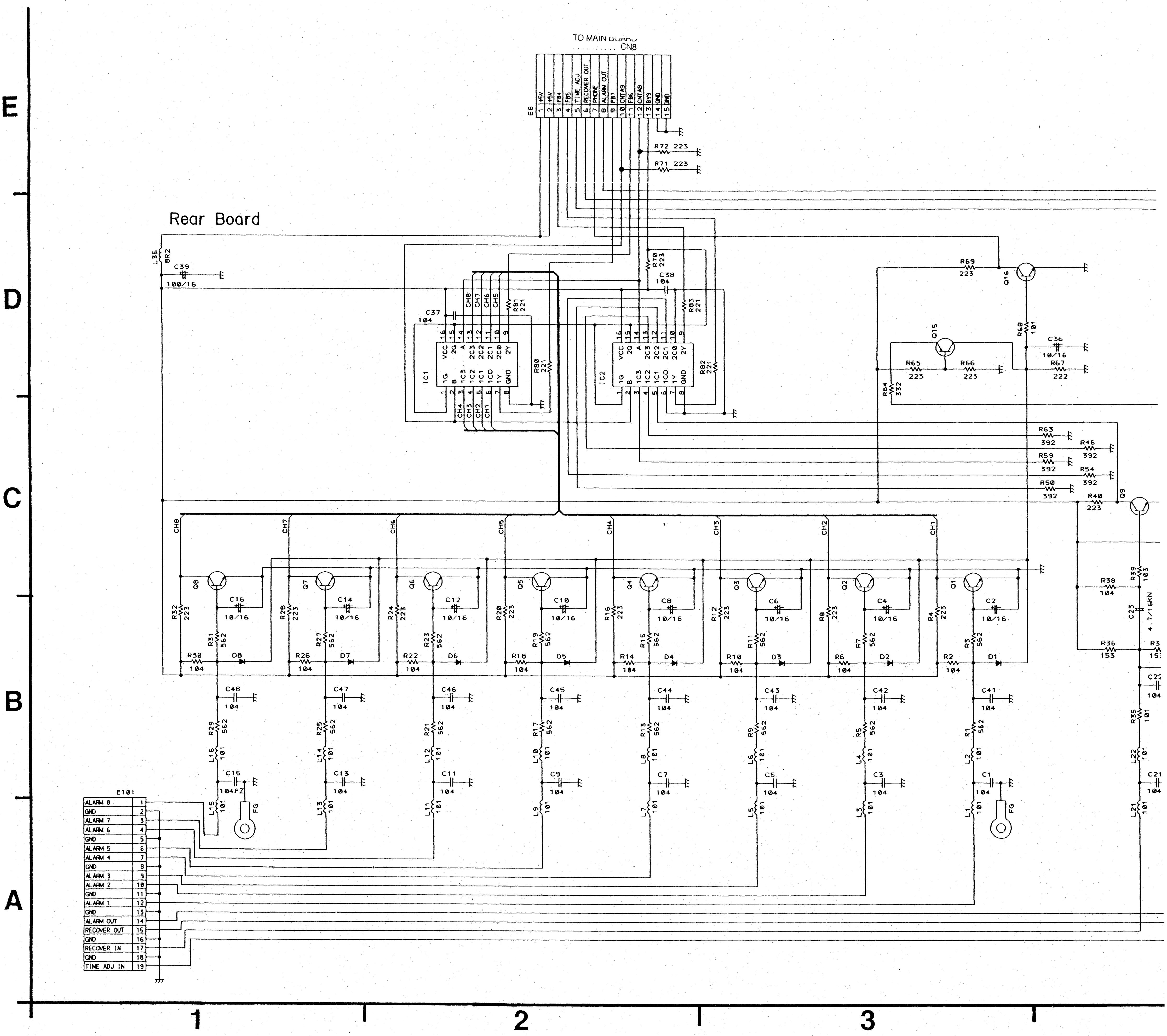
< Index >
Front Sub Board
(Pattern Side)

D101	A5
D102	A5
D103	A5
D104	A6
D105	A6
D106	A6
D107	A6
D108	A6

< Index >
Front Board
(Pattern Side)

IC1	A2/A3
IC2	A4
D21	B2
D22	B2
D23	B2
D24	B2
D25	B2
D26	B3
D27	B3
D28	B3
D29	B1
D30	B4
D31	B4
D32	B4

SCHEMATIC DIAGRAM OF R



A
B
C
D
E
1
2
3
Rear Board
TO MAIN BOARD CN8
E8
1 +5V
2 +5V
3 FB4
4 FB5
5 TIME ADJ
6 RECOVER OUT
7 PHONE
8 ALARM OUT
9 FB7
10 CNTA9
11 FB6
12 CNTA8
13 BY9
14 GND
15 GND
E101
ALARM 8 1
GND 2
ALARM 7 3
ALARM 6 4
GND 5
ALARM 5 6
ALARM 4 7
GND 8
ALARM 3 9
ALARM 2 10
GND 11
ALARM 1 12
GND 13
ALARM OUT 14
RECOVER OUT 15
GND 16
RECOVER IN 17
GND 18
TIME ADJ IN 19
IC1
IC2
1G
B
1C3
1C2
1C1
1C0
1Y
GND
VCC
2G
A
2C3
2C2
2C1
2C0
2Y
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
L35 8R2
C39 100/16
C37 104
C38 104
R70 223
R71 223
R72 223
R80 221
R81 221
R82 221
R83 221
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q15
Q16
R64 332
R65 223
R66 223
R67 222
R68 101
R69 223
C36 10/16
R63 392
R46 392
R59 392
R54 392
R50 392
R40 223
R39 103
R38 104
R36 153
C23 4.7/16KN
R35 101
L21 101
L22 101
C21 104
C22 104
R32 223
R31 562
R30 104
C16 10/16
D8
R28 223
R27 562
R26 104
C14 10/16
D7
R24 223
R23 562
R22 104
C12 10/16
D6
R20 223
R19 562
R18 104
C10 10/16
D5
R16 223
R15 562
R14 104
C8 10/16
D4
R12 223
R11 562
R10 104
C6 10/16
D3
R8 223
R7 562
R6 104
C4 10/16
D2
R4 223
R3 562
R2 104
C2 10/16
D1
C48 104
C47 104
C46 104
C45 104
C44 104
C43 104
C42 104
C41 104
R29 562
R25 562
R21 562
R17 562
R13 562
R9 562
R5 562
R1 562
L16 101
L14 101
L12 101
L10 101
L8 101
L6 101
L4 101
L2 101
C15 104FZ
C13 104
C11 104
C9 104
C7 104
C5 104
C3 104
C1 104
L15 101
L13 101
L11 101
L9 101
L7 101
L5 101
L3 101
L1 101
FG
FG

< Index >
Rear Board
(Schematic Diagram)

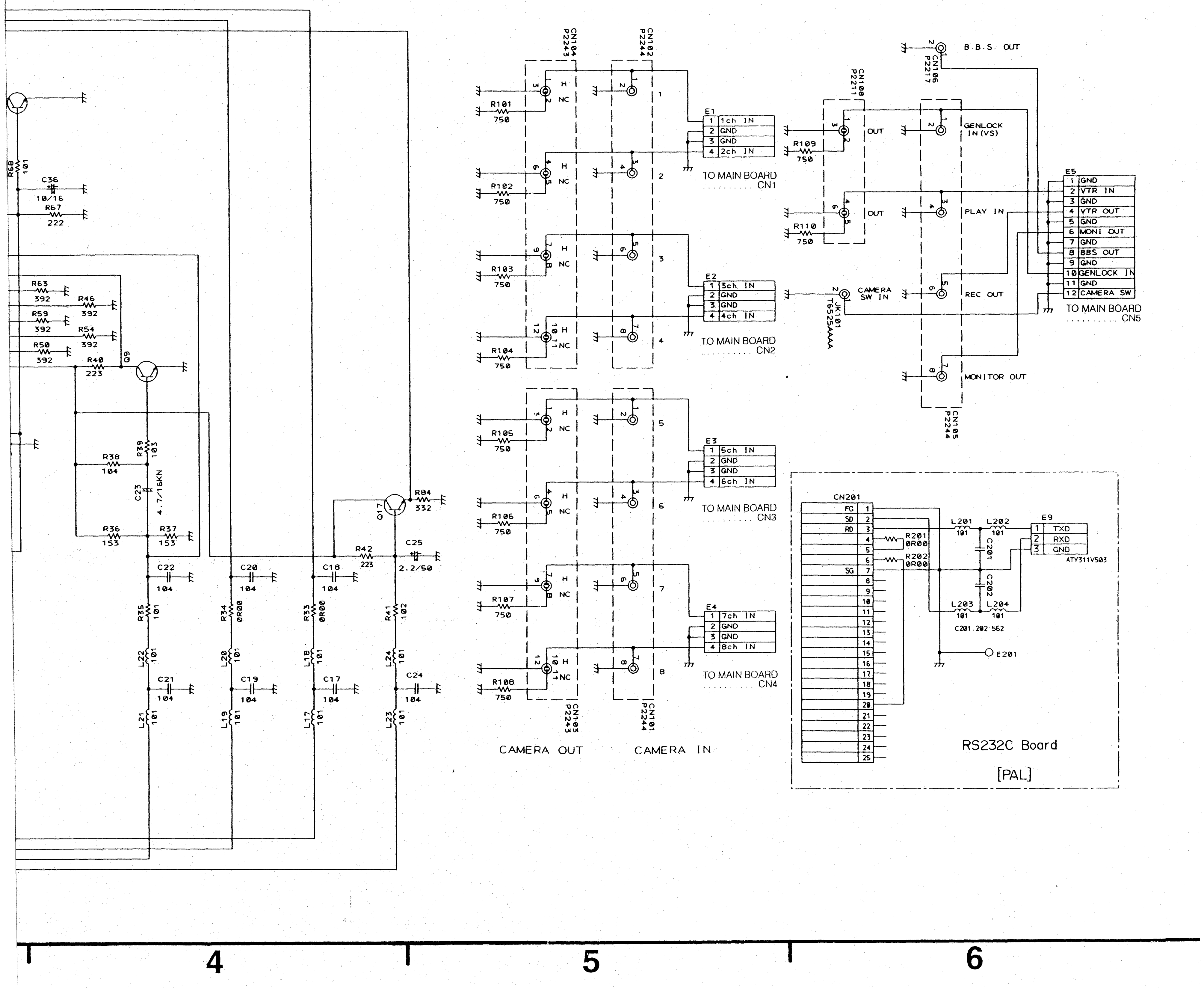
IC1	D2
IC2	D2
Q1	C3
Q2	C3
Q3	C3
Q4	C2
Q5	C2
Q6	C2
Q7	C1
Q8	C1
Q9	C4
Q15	D3
Q16	D3
Q17	C4
D1	B3
D2	B3
D3	B3
D4	B2
D5	B2
D6	B2
D7	B1
D8	B1

REAR BOARD

	IC1	IC2
Pin 1	5.1	5.1
2	0.7	0.7
3	0	0
4	0	0
5	0	0
6	0	0
7	1.7	0.3
8	0	0
9	1.8	0.3
10	0	0
11	0	0
12	0	0
13	0	0
14	4.0	4.0
15	5.1	5.1
16	5.1	5.1

	B	C	E
Q1	0.6	0	0
2	0.6	0	0
3	0.6	0	0
4	0.6	0	0
5	0.6	0	0
6	0.6	0	0
7	0.6	0	0
8	0.6	0	0
9	0.6	0	0
15	2.6	0.3	2.6
16	0.3	5.1	0
17	5.0	5.1	4.3

RAM OF REAR BOARD


R68
101
C36
10/16
R67
222
R63
392
R46
392
R59
392
R54
392
R50
392
R40
223
Q9
R38
104
R39
103
C23
4.7/16KN
R36
153
R37
153
Q17
R84
332
R42
223
C25
2.2/50
C22
104
C20
104
C18
104
R35
101
R34
0R00
R33
0R00
R41
102
L22
101
L20
101
L18
101
L24
101
C21
104
C19
104
C17
104
C24
104
L21
101
L19
101
L17
101
L23
101
CN104
P2243
CN102
P2244
R101
750
R102
750
R103
750
R104
750
R105
750
R106
750
R107
750
R108
750
H
NC
E1
1ch IN
GND
GND
2ch IN
TO MAIN BOARD
CN1
E2
3ch IN
GND
GND
4ch IN
TO MAIN BOARD
CN2
E3
5ch IN
GND
GND
6ch IN
TO MAIN BOARD
CN3
E4
7ch IN
GND
GND
8ch IN
TO MAIN BOARD
CN4
CN103
P2243
CN101
P2244
CAMERA OUT
CAMERA IN
B.B.S. OUT
CN106
P2217
CN108
P2211
OUT
OUT
R109
750
R110
750
GENLOCK IN (VS)
PLAY IN
REC OUT
MONITOR OUT
CAMERA SW IN
JK101
T6525AAAA
CN105
P2244
E5
1 GND
2 VTR IN
3 GND
4 VTR OUT
5 GND
6 MONI OUT
7 GND
8 BBS OUT
9 GND
10 GENLOCK IN
11 GND
12 CAMERA SW
TO MAIN BOARD
CN5
CN201
FG
SD
RD
SG
R201
0R00
R202
0R00
L201
101
L202
101
C201
C202
L203
101
L204
101
C201.202 562
E201
E9
1 TXD
2 RXD
3 GND
ATY311V503
RS232C Board
[PAL]
4
5
6

Note: The value Indicated In the schematic diagram should be read as follows:

☐ ☐ ☐
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33×10^0 = 33 Ω
561 → 56×10^1 = 560 Ω
123 → 12×10^3 = 12k Ω
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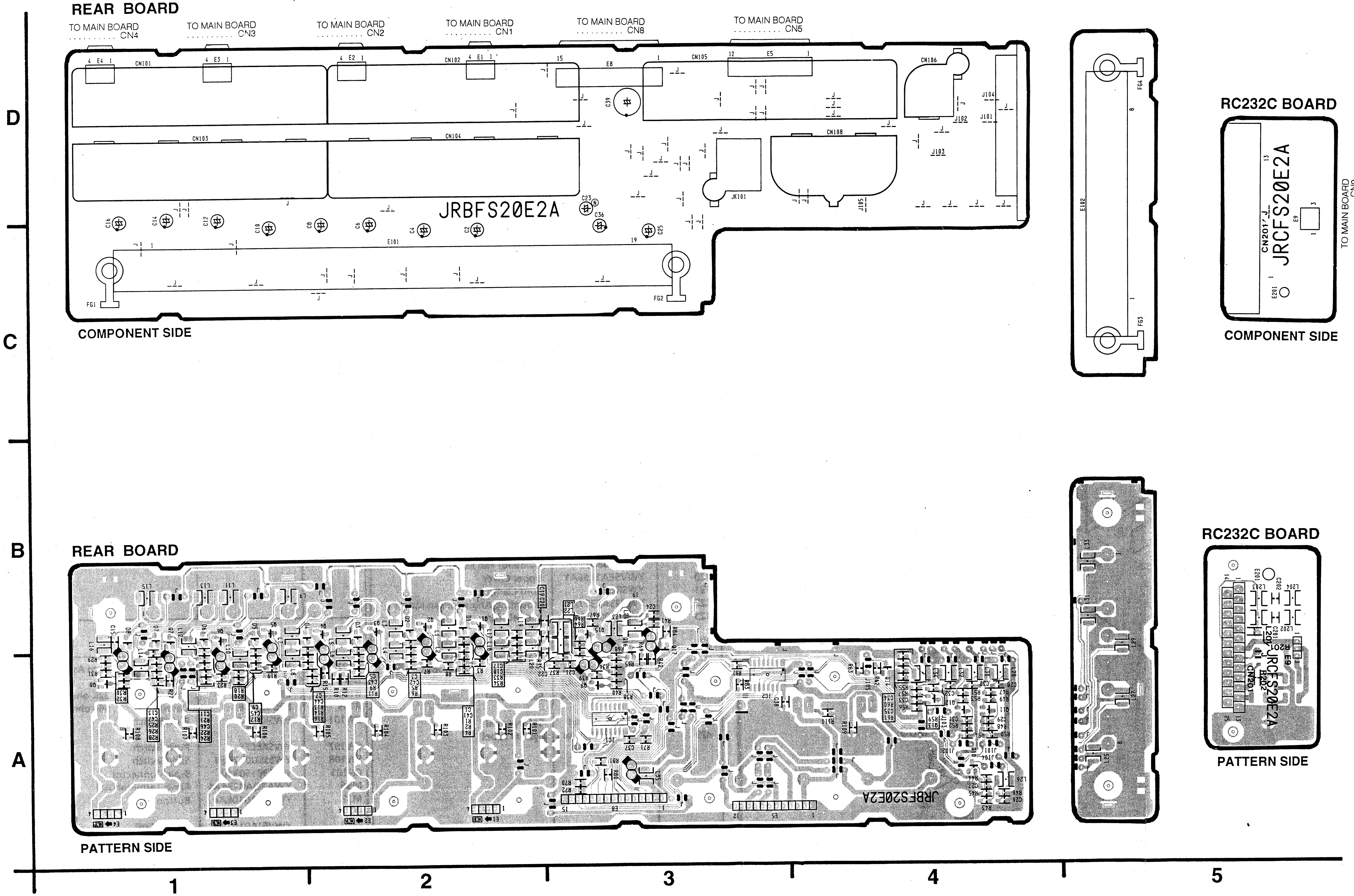
104 → 10×10^4 = 100000 pF = 0.1 μF
The suffix attached to capacitance indicates a type of capacitor.

CONDUCTOR VIEW OF REAR BOARD



REAR BOARD
TO MAIN BOARD ………… CN4
TO MAIN BOARD ………… CN3
TO MAIN BOARD ………… CN2
TO MAIN BOARD ………… CN1
TO MAIN BOARD ………… CN8
TO MAIN BOARD ………… CN5
CN101
CN102
CN103
CN104
CN105
CN106
CN108
E1
E2
E3
E4
E5
E8
E101
E102
J101
J102
J103
J104
J105
JK101
C39
C23
C36
FG1
FG2
FG3
FG4
JRBFS20E2A
COMPONENT SIDE
RC232C BOARD
JRCFS20E2A
CN201
E9
E201
TO MAIN BOARD CN9
COMPONENT SIDE
REAR BOARD
PATTERN SIDE
RC232C BOARD
PATTERN SIDE
D
C
B
A
1
2
3
4
5

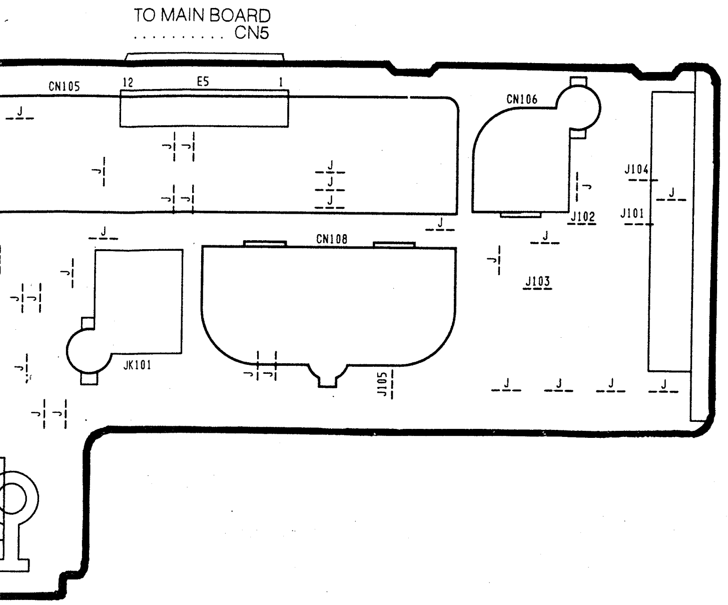
< Index>
REAR BOARD
(COMPONENT SIDE)

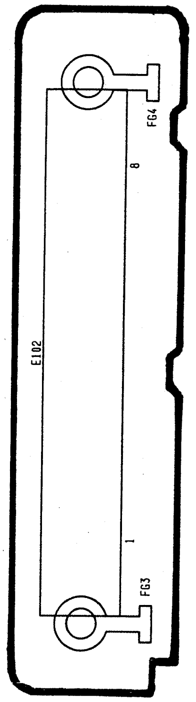
IC1	A3
IC2	A3
Q1	B2
Q3	B2
Q4	B2
Q5	B1
Q6	B1
Q7	B1
Q8	A1
Q9	A3
Q10	A4
Q11	A4
Q12	A4
Q13	A4
Q14	A4
Q15	B3
Q16	A3
Q17	A3
D1	B2
D2	B2
D3	B2
D4	B2
D5	B1
D6	B1
D7	B1
D8	B1

< Index>
REAR BOARD
(PATTERN SIDE)

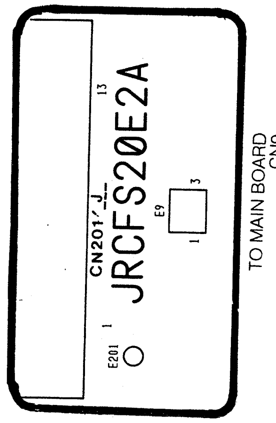
IC1	B3
IC2	B3
Q1	B2
Q2	B2
Q3	B2
Q4	B2
Q5	B1
Q6	B1
Q7	B1
Q8	B1
Q9	B3
Q15	B3
Q16	B3
Q17	B3
D1	B2
D2	B2
D3	B2
D4	B2
D5	B1
D6	B1
D7	B1
D8	B1

VIEW OF REAR BOARD


TO MAIN BOARD
.... CN5
CN105
12
E5
1
CN106
CN108
J104
J102
J101
J103
JK101
J105


FG4
E102
FG3

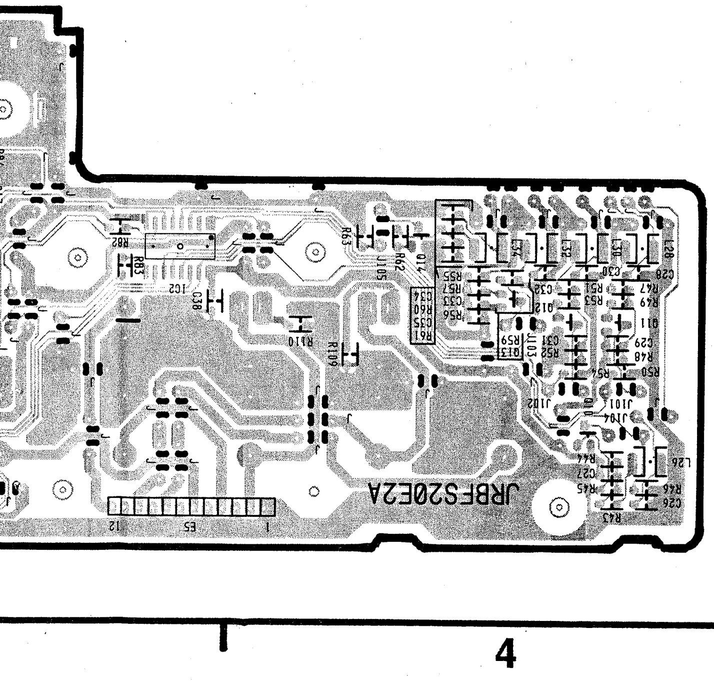
RC232C BOARD

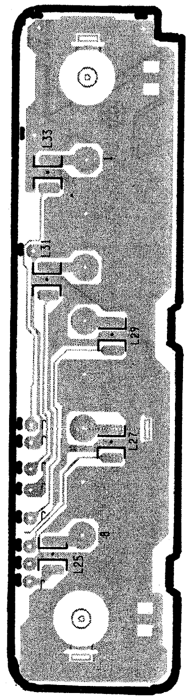

JRCFS20E2A
CN201
E9
E201
TO MAIN BOARD
CN9

COMPONENT SIDE

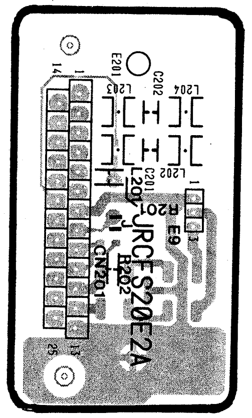
< Index>
REAR BOARD
(COMPONENT SIDE)

IC1	A3
IC2	A3
Q1	B2
Q3	B2
Q4	B2
Q5	B1
Q6	B1
Q7	B1
Q8	A1
Q9	A3
Q10	A4
Q11	A4
Q12	A4
Q13	A4
Q14	A4
Q15	B3
Q16	A3
Q17	A3
D1	B2
D2	B2
D3	B2
D4	B2
D5	B1
D6	B1
D7	B1
D8	B1


JRBFS20E2A
E5
12
1
4



RC232C BOARD


JRCFS20E2A
CN201
E9
E201
R201
R202

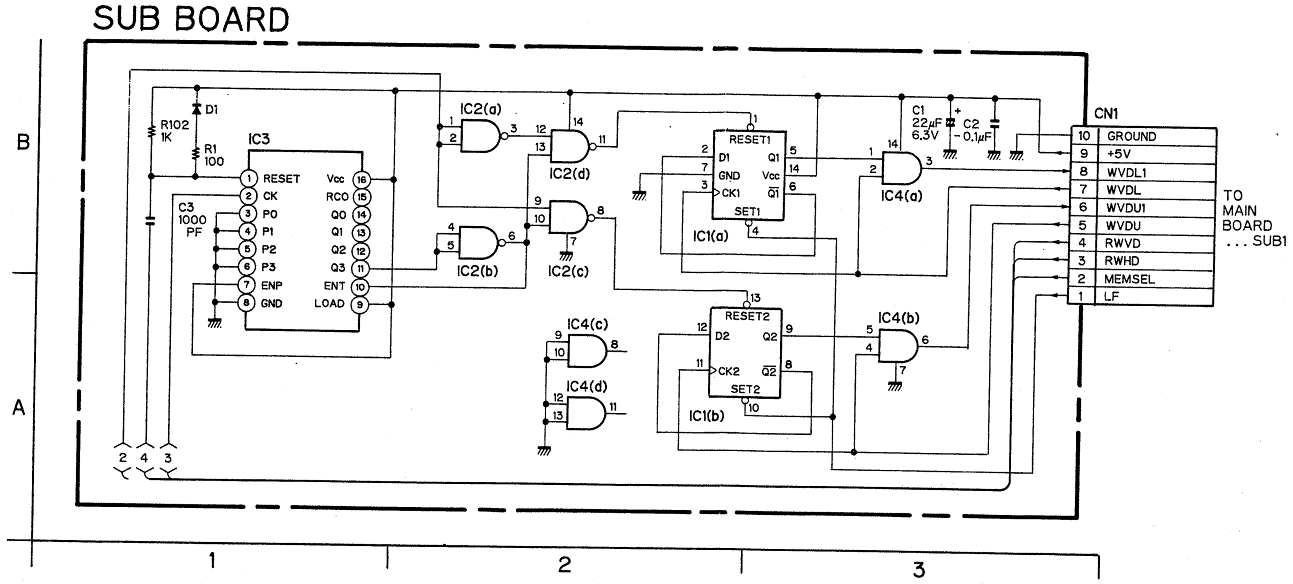
PATTERN SIDE

5

< Index>
REAR BOARD
(PATTERN SIDE)

IC1	B3
IC2	B3
Q1	B2
Q2	B2
Q3	B2
Q4	B2
Q5	B1
Q6	B1
Q7	B1
Q8	B1
Q9	B3
Q15	B3
Q16	B3
Q17	B3
D1	B2
D2	B2
D3	B2
D4	B2
D5	B1
D6	B1
D7	B1
D8	B1

SCHEMATIC DIAGRAM OF SUB BOARD


SUB BOARD
B
A
R102
1K
D1
R1
100
C3
1000
PF
IC3
RESET
CK
P0
P1
P2
P3
ENP
GND
Vcc
RCO
Q0
Q1
Q2
Q3
ENT
LOAD
IC2(a)
IC2(b)
IC2(c)
IC2(d)
IC4(c)
IC4(d)
IC1(a)
RESET1
D1
GND
CK1
Q1
Vcc
SET1
IC1(b)
RESET2
D2
CK2
Q2
SET2
IC4(a)
IC4(b)
C1
22µF
6.3V
C2
0.1µF
CN1
10 GROUND
9 +5V
8 WVDL1
7 WVDL
6 WVDU1
5 WVDU
4 RWVD
3 RWHD
2 MEMSEL
1 LF
TO
MAIN
BOARD
... SUB1
2
4
3
1
2
3

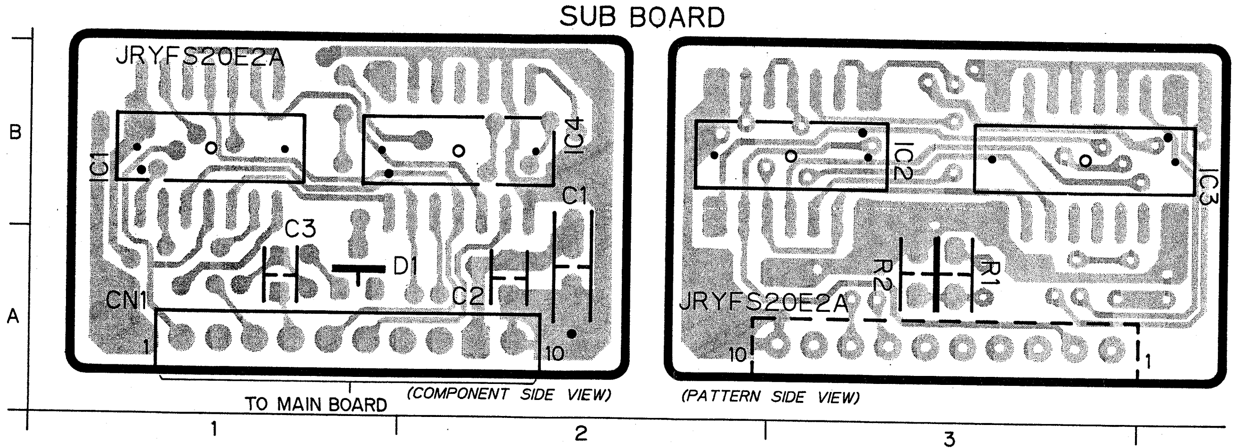
< Index>
SUB BOARD

IC1	A2/A3
IC2	B2
IC3	A1/B1
IC4	A2, A3, B3
D1	B1

SUB BOARD

	IC1	IC2	IC3	IC4
Pin 1	5.0	1.5	5.1	0
2	0.8	1.5	0.8	5.1
3	0	1.5	0	0
4	5.1	5.0	0	0
5	0	5.0	0	0
6	5.1	0.1	0	0
7	0	0	5.1	0
8	5.1	5.1	0	0
9	0	1.4	5.1	0
10	5.1	0.1	0.1	0
11	0	5.1	5.0	0
12	5.1	1.4	0.1	0
13	5.1	0.1	0	0
14	5.1	5.1	0	5.1
15			0	
16			5.1	

CONDUCTOR VIEW OF SUB BOARD


SUB BOARD
B
A
JRYFS20E2A
IC1
IC4
C1
C3
D1
C2
CN1
1
10
IC2
IC3
R2
R1
JRYFS20E2A
10
1
TO MAIN BOARD
(COMPONENT SIDE VIEW)
(PATTERN SIDE VIEW)
1
2
3

< Index>
SUB BOARD
(COMPONENT SIDE)

IC1	B1
IC4	B1/B2
D1	A1

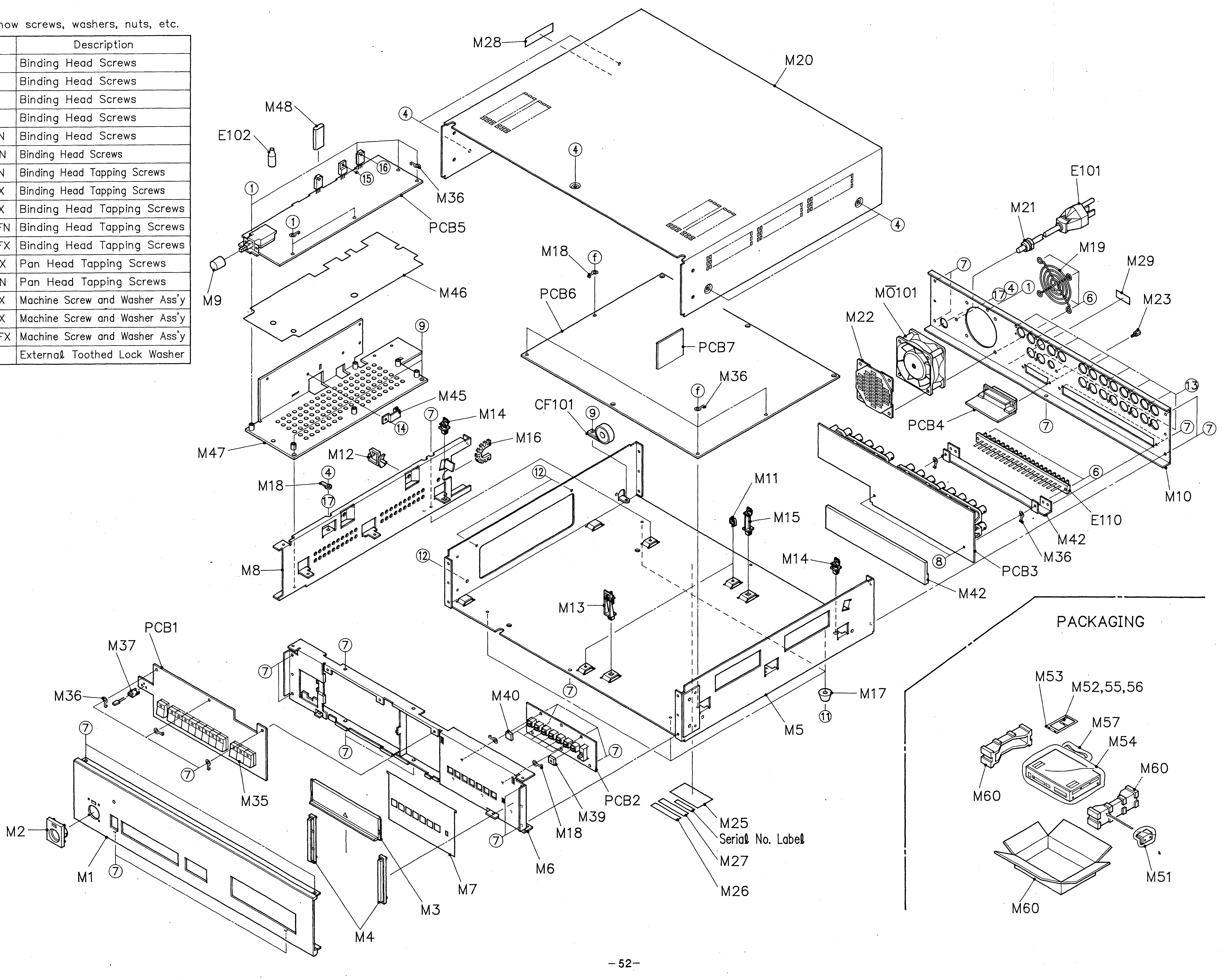
< Index>
SUB BOARD
(PATTERN SIDE)

IC2	B2/B3
IC3	IB3

EXPLODED VIEW

○ Numbers show screws, washers, nuts, etc.

No.	Screws	Description
①	XSB3+6FN	Binding Head Screws
②	XSB3+6FX	Binding Head Screws
③	XSB3+8FX	Binding Head Screws
④	XSB4+6FN	Binding Head Screws
⑤	XSB4+10FN	Binding Head Screws
⑥	XSB4+35FN	Binding Head Screws
⑦	XTB3+6FFN	Binding Head Tapping Screws
⑧	XTB3+6FFX	Binding Head Tapping Screws
⑨	XTB3+8FFX	Binding Head Tapping Screws
⑩	XTB3+12FFN	Binding Head Tapping Screws
⑪	XTB3+12FFX	Binding Head Tapping Screws
⑫	XTN3+6CFX	Pan Head Tapping Screws
⑬	XTN3+8CFN	Pan Head Tapping Screws
⑭	XYN3+J6FX	Machine Screw and Washer Ass'y
⑮	XYN3+J8FX	Machine Screw and Washer Ass'y
⑯	XYN3+J10FX	Machine Screw and Washer Ass'y
⑰	XWC4BFN	External Toothed Lock Washer


M28
M20
④
M48
E102
⑯
⑮
①
M36
PCB5
④
④
E101
M21
M19
M29
M23
⑦
⑰ ④ ①
⑥
MO101
M22
M9
M46
M18
PCB6
PCB7
M36
⑨
M45
M47
M14
⑦
⑭
M16
CF101
⑨
M12
M18
④
⑰
M8
⑫
⑫
M11
M15
M14
M13
PCB4
⑦
⑬
⑦ ⑦
⑥
E110
M10
M42
M36
PCB3
⑧
M42
M17
⑪
M5
PCB1
M37
M36
⑦
⑦
⑦
⑦
⑦
M35
M40
⑦
⑦
PCB2
M39
M18
⑦
M2
M1
⑦
M4
M3
M7
M6
M25
Serial No. Label
M27
M26
PACKAGING
M53
M52,55,56
M57
M54
M60
M60
M51
M60

Importar

1. Comp

When

2. RTL : I

REF.NO.

CF101
MO101
E101 ⚠

E102
E103
M1
M2
M3

M4
M5
M6
M7
M8

M9
M10
M11
M12
M13

M14
M15
M16
M17
M18

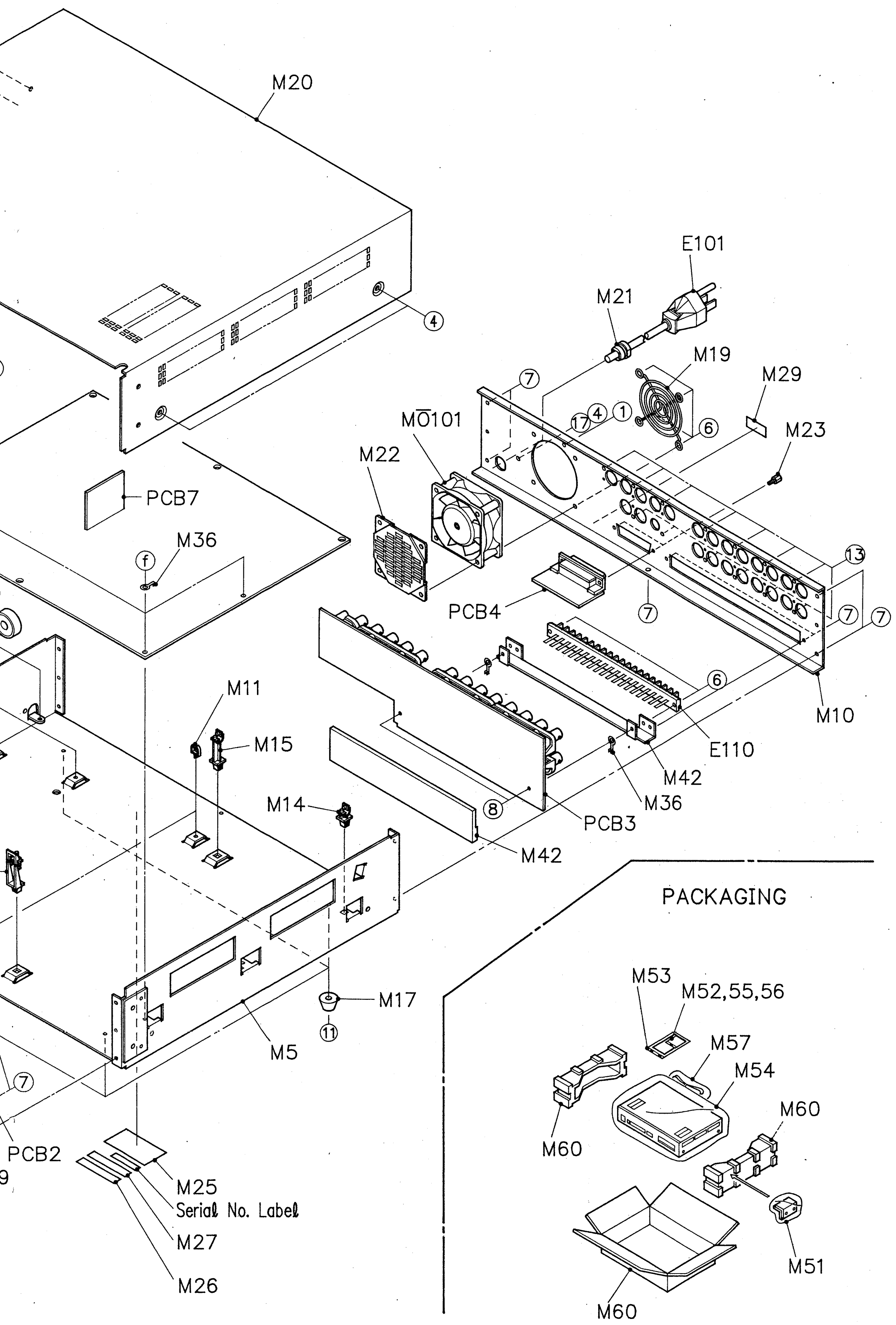
M19
M20
M21
M22
M23

M25 ⚠

M26
M27

M28
M29

VIEW



REPLACEMENT PARTS LIST

Important Notice

1. Components identified by "⚠" mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. RTL : Retention Time Limited,

MISCELLANEOUS

REF.NO.	PART NO.	DESCRIPTION
CF101	YWTRCN16816	Filter
MO101	YWFBA06A12LD	DC Motor
E101 ⚠	YWACJ450/AA	AC Power Cord for WJ-FS20/A
	YWACJ450/G	AC Power Cord for WJ-FS20/G
	YWGTBS2R5B	AC Power Cord for WJ-FS20/B
E102	YFCD20ACCAP	Insulator
E103	YW840522	Insulator Fuse Cover
M1	YWV5WA1528A2	Front Panel
M2	YWA5CD0009A3	Card Holder
M3	YWV6EA0129A3	Lid for Sub Panel
M4	YWV2EB0109A3	Guide
M5	YWV2KA0844A1	Main Chassis
M6	YWV2KA0846A2	Front Chassis
M7	YWV7SA1799A4	Label
M8	YWV2SA2540A2	Mounting Angle
M9	YWA5RG0141A3	Power Switch Knob
M10	YWV5WA1529A2	Rear Panel
M11	YWMSC1609	Cord Clamp
M12	YW2U46	Cord Clamp
M13	YWKGES25	Support
M14	YWPHD08	Support
M15	YWPHD25	Support
M16	YWA6DB0030A4	Fastener
M17	YWV5350WB01	Rubber Foot
M18	YW-BCG-EM01	Earth Lug
M19	YWASF68001	Guide for Fan Motor
M20	YWV5EA1156A1	Upper Cover
M21	YWSR6W1	Cord Clamp
M22	YWV2SA2377A4	Mounting Angle for Fan Motor
M23	YW0600003213	Special Screw
M25 ⚠	YWV7QA3048A4	Main Label for WJ-FS20/G
	YWV7QA3068A4	Main Label for WJ-FS20/B
	YWV7QA3069A4	Main Label for WJ-FS20/A
M26	YWV7MA0015A4	Safety Label
M27	YWV7MA0081A4	Safety Label
M28	YFV7MB0099A4	Safety Label
M29	YWV7QA2372A4	System Label

FRONT BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB1 (RTL)	YWJKBFS20E1A	Printed Circuit Board Assy
IC1	MC74HC273AF	IC
IC2	MC74HC174AF	IC
D1-12	SLH38MC	LED
D13	LN29RD	LED
D14	LN242RP	LED
D21-32	YWDAN212K	Diode
R1-8	ERDS2TJ223	Carbon 22K ohms 1/4W
R9,10	ERDS2TJ221	Carbon 220 ohms 1/4W
R21-34	ERDS2TJ561	Carbon 560 ohms 1/4W
R35	ERDS2TJ224	Carbon 220K ohms 1/4W
C1	ECEA0JKS101	Electrolytic 100 µF 6.3V
C2,3	YF400104FZT	Ceramic 0.1 µF
C6	YF400104FZT	Ceramic 0.1 µF
L1	YWNL458R2J	Coil 8.2 µH
SW1-12	YWAB12HA135	Push Switch
E1	YWLH55	LED Holder
CN6	YW530150810	8-pin Connector
CN7	YW530151110	11-pin Connector
M35	YWV6JA0074A3	Button
M36	YWA2QA0134A4	Electrode(X3)
M37	YWA2NA0300A4	LED Spacer

FRONT SUB BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB2 (RTL)	YWJKCFS20E1A	Printed Circuit Board Assy
D101-108	YWDAN212K	Diode
R101-104	ERDS2TJ223	Carbon 22K ohms 1/4W
R105	ERDS2TJ561	Carbon 560 ohms 1/4W
SW101-106	YWSKECAF	Push Switch
SW107	YWSKECFS	Push Switch
SW108	YWSSSU012L6N	Slide Switch
CN101	YW530150910	9-pin Connector
M36	YWA2QA0134A4	Earth Terminal (X2)
M39	YWV6JA0106A4	Button
M40	YWV6JA0107A4	Button (X6)

REAR BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB3 (RTL)	YWJKBFS20E2A	Printed Circuit Board Assy	
IC1,2	YWMC74HC253F	IC	
Q1-9	2SC2412-QRS	Transistor	
Q15	2SA1037-QRS	Transistor	
Q16,17	2SC2412-QRS	Transistor	
D1-8	YWDAN212K	Diode	
R1	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R2	YF2116104JT	Carbon	100K ohms 1/10W
R3	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R4	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R5	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R6	YF2116104JT	Carbon	100K ohms 1/10W
R7	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R8	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R9	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R10	YF2116104JT	Carbon	100K ohms 1/10W
R11	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R12	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R13	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R14	YF2116104JT	Carbon	100K ohms 1/10W
R15	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R16	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R17	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R18	YF2116104JT	Carbon	100K ohms 1/10W
R19	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R20	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R21	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R22	YF2116104JT	Carbon	100K ohms 1/10W
R23	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R24	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R25	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R26	YF2116104JT	Carbon	100K ohms 1/10W
R27	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R28	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R29	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R30	YF2116104JT	Carbon	100K ohms 1/10W
R31	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R32	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R33,34	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R35	YF2116101JT	Carbon	100 ohms 1/10W
R36,37	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R38	YF2116104JT	Carbon	100K ohms 1/10W
R39	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R40	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R41	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R42	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R46,50	YF2116392JT	Carbon	3.9K ohms 1/10W
R54,59	YF2116392JT	Carbon	3.9K ohms 1/10W
R63	YF2116392JT	Carbon	3.9K ohms 1/10W
R64	YF2116332JT	Carbon	3.3K ohms 1/10W
R65,66	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R67	YF2116222GT	Carbon	2.2K ohms 1/10W
R68	YF2116101JT	Carbon	100 ohms 1/10W
R69-72	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R80-83	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R84	YF2116332JT	Carbon	3.3K ohms 1/10W
R101-110	YF2116750JT	Carbon	75 ohms 1/10W
C1	YF400104FZT	Ceramic	0.1 µF
C2	ECEA1CKS100	Electrolytic	10 µF 16V
C3	YF400104FZT	Ceramic	0.1 µF
C4	ECEA1CKS100	Electrolytic	10 µF 16V
C5	YF400104FZT	Ceramic	0.1 µF
C6	ECEA1CKS100	Electrolytic	10 µF 16V
C7	YF400104FZT	Ceramic	0.1 µF
C8	ECEA1CKS100	Electrolytic	10 µF 16V
C9	YF400104FZT	Ceramic	0.1 µF
C10	ECEA1CKS100	Electrolytic	10 µF 16V
C11	YF400104FZT	Ceramic	0.1 µF
C12	ECEA1CKS100	Electrolytic	10 µF 16V
C13	YF400104FZT	Ceramic	0.1 µF
C14	ECEA1CKS100	Electrolytic	10 µF 16V
C15	YF400104FZT	Ceramic	0.1 µF
C16	ECEA1CKS100	Electrolytic	10 µF 16V
C17-22	YF400104FZT	Ceramic	0.1 µF
C23	ECEA1CKN4R7	Electrolytic	4.7 µF 16V
C24	YF400104FZT	Ceramic	0.1 µF
C25	ECEA1HKS2R2	Electrolytic	2.2 µF 50V
C36	ECEA1CKS100	Electrolytic	10 µF 16V
C37,38	YF400104FZT	Ceramic	0.1 µF
C39	ECEA1CKS101	Electrolytic	100 µF 16V
C41-48	YF400104FZT	Ceramic	0.1 µF
L1-16	YWNL32101J	Coil	100 µH
L17-24	YWNL45101J	Coil	100 µH
L35	YWNL458R2J	Coil	8.2 µH
JK101	YWT6525AAAA	Jack	
E1	SX004B19P17Y	19-pin Terminal Board	
CN101,102	YWP2244	BNC 4-pin Connector	
CN103,104	YWP2243	BNC 4-pin Connector	
CN105	YWP2244	BNC 4-pin Connector	
CN106	YWP2217	BNC 1-pin Connector	
CN108	YWP2211	BNC 2-pin Connector	
M36	YWA2QA0134A4	Earth Terminal	
M42	YWV2SA2541A4	Mounting Angle	
M43	YWV2HA1132A3	Shield Parts	

RS232C BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB4 (RTL)	YWJKCFS20E2A	Printed Circuit Board Assy	
R201,202	ERJ6GEY0R00	Carbon	0 ohms 1/10W
C201,202	YF400562XKT	Ceramic	5600 pF
L201-204	YWNL45101J	Coil	100 µH
CN201	YWDT11321L5	25-pin Connector	

POWER BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB5 (RTL)	YWJKYFS20E1A	Printed Circuit Board Assy	
IC1	YWFA5304P	IC	
IC2	YWNJM7905FA	IC	
IC3	YWTA76431S	IC	
Q1	2SK960	FET	
Q2	2SC1740	Transistor	
D1 ⚠	YWRBV406	Diode	
D2	RU1P	Diode	
D3	YWEQA0325	Diode	
D4	YWERA9102	Diode	
D5	MA165	Diode	
D6	RD5.1JB2	Diode	
D7	YWERA9102	Diode	
D8	YWPC111LY	Diode	
D9	ESAC82M006	Diode	
D10	YWERB84009	Diode	
TH1	YW16D13	Thermistor	
VS1	ERZC07DK471U	Znr	
R1	ERC12ZGM105	Solid Resistor	1M ohms 1/2W
R2	ERF5TK3R3	Wire Wound	3.3 ohms 5W
R3	ERX2SJR75	Metal	0.75 ohms 2W
R4,5	ERD25FJ104	Carbon	100K ohms 1/4W
R6	ERG5SJ203	Metal	20K ohms 5W
R7	ERDS2TJ104	Carbon	100K ohms 1/4W
R8	ERDS2TJ105	Carbon	1M ohms 1/4W
R9	ERDS2TJ220	Carbon	22 ohms 1/4W
R10	ERDS2TJ222	Carbon	2.2K ohms 1/4W
R11	ERDS2TJ181	Carbon	180 ohms 1/4W
R12	ERDS2TJ513	Carbon	51K ohms 1/4W
R13	ERDS2TJ622	Carbon	6.2K ohms 1/4W
R14	ERC12ZGM156	Solid Resistor	15M ohms 1/2W
R15	ERDS2TJ100	Carbon	10 ohms 1/4W
R16	ERDS2TJ223	Carbon	22K ohms 1/4W
R17	ERDS2TJ333	Carbon	33K ohms 1/4W
R18	ERDS2TJ470	Carbon	47 ohms 1/4W
R19	ERDS2TJ102	Carbon	1K ohms 1/4W
R20	ERDS2TJ562	Carbon	5.6K ohms 1/4W
R21	ER0S2CKF7501	Metal	7.5K ohms 1/4W
R22	ER0S2CKF6801	Metal	6.8K ohms 1/4W
VR1	YWH0621A1K	Variable Resistor	1K ohms
C1	ECQU2A104MV	Plastic	0.1 µF
C2-4	ECKDRS332ME	Ceramic	3300 pF
C5	ECQU2A104MV	Plastic	0.1 µF
C6	EC0S2GA151DA	Electrolytic	150 µF 40V
C7	ECQE6103KZ	Plastic	0.01 µF
C8,9	ECEA1HU2R2	Electrolytic	2.2 µF 50V
C11	ECQM1H104JZ	Plastic	0.1 µF
C12	ECQP1H331JZ	Plastic	330 pF 50V
C13	ECA1VFQ270	Electrolytic	27 µF 35V
C14	ECQM1H473JZ	Plastic	0.047 µF 50V
C15	ECQB1H682JF	Plastic	6800 pF
C16	ECKDRS332ME	Ceramic	3300 pF
C17,18	ECA1AFQ222	Electrolytic	2200 µF 10V
C19-24	ECA1AFQ331	Electrolytic	330 µF 10V
C25	ECA1EFQ102	Electrolytic	1000 µF 25V
C26	ECA1AFQ331	Electrolytic	330 µF 10V
C27	ECA1AFQ471L	Electrolytic	470 µF 10V
C28	ECEA1CU471	Electrolytic	470 µF 16V
C29	ECEA1AN220S	Electrolytic	22 µF 10V
C30	ECQB1H223JF	Plastic	0.022 µF 50V
C32	ECKDRS332ME	Ceramic	3300 PF
L1,2	YWLF4D183	Coil	
L3	YFBL02RN2R62	Coil	
L4	EL05SI330K	Coil	33 µH
L5	YWPC7120K	Coil	12 µH
L6	YWPC7220K	Coil	22 µH
L7	YWPC7120K	Coil	12 µH
L8	YWPC7220K	Coil	22 µH
L9	YWPC7120K	Coil	12 µH
L10,11	YWPC7220K	Coil	22 µH
T1 ⚠	ETS28BF136AC	Power Transformer	
SW1 ⚠	YWSDDFA3	Power Switch	
F1 ⚠	XBA2C16ET0A	Current Fuse	1.6A 240V
E1,2	YWTM028B	Terminal-pin	
E3,4 ⚠	S-N5057	Fuse Holder	
E5-7	YW851248	Insulator Cover A	
E9	YW851040	Insulator Cover B	
CN2	YW53014-0210	2-pin Connector	
M36	YWA2QA0134A4	Electrode	
M45	YWV2SA2317A4	Mounting Angle	
M46	YWV2PA0584A4	Insulator	
M47	YWV7DA0327A2	Heat Sink	
M48	YW45T01130L	Insulator Tube	

MAIN BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB6 (RTL)	YWJKZFS20E1A	Printed Circuit Board Assy
IC1	UPD74HC4053G	IC
IC2-6	UPD74HC4051G	IC
IC7	MC74HC174AF	IC
IC8	MC74HC374AF	IC
IC9	YWMC74HC175F	IC
IC10	NJM2903M	IC
IC11,12	UPD74HC4052G	IC
IC13	YWNJM4565M	IC
IC14,15	UPD74HC4052G	IC
IC16-18	YWMC74HC393F	IC
IC19	YWMC74HC32AF	IC
IC20	YWMC74HC11F	IC
IC101	YWM141625AFU	IC
IC102	YWMC74HC04AF	IC
IC103,104	YWMC74HC00AF	IC
IC105	YWSC7S04F	IC
IC106	YWM51271FP	IC
IC108	MC74HC4538F	IC
IC109	YWNJM2229M	IC
IC110	YWSC7S00F	IC
IC200-202	YWSC7S08F	IC
IC203	YWTC4W53FL	IC
IC204	YWSC7S04F	IC
IC301	YWM141625AFU	IC
IC302	YWMC74HC04AF	IC
IC303,304	YWMC74HC00AF	IC
IC305	YWSC7S04F	IC
IC306	YWM51271FP	IC
IC308	MC74HC4538F	IC
IC309	YWSC7S08F	IC
IC310	YWSC7S00F	IC
IC501	YWM141625AFU	IC
IC502	YWMC74HC04AF	IC
IC503,504	YWMC74HC00AF	IC
IC505	YWSC7S04F	IC
IC506	YWM51271FP	IC
IC508	MC74HC4538F	IC
IC509	YWSC7S08F	IC
IC510	YWSC7S00F	IC
IC701	UPD74HC4053G	IC
IC702	YWNJM4565M	IC
IC703	YWCXD1175AM	IC
IC704	YWSC7S04F	IC
IC705	UPD74HC4053G	IC
IC706	YWNJM4565M	IC
IC707	NJM3415M	IC
IC708	YWCXD1175AM	IC
IC709	YWSC7S04F	IC
IC710	YWL7A1121	LSI
IC711	YWMC74HC244F	IC
IC712	YWSC7S04F	IC
IC713,714	YWMC74HC153F	IC
IC715	YWSC7S04F	IC
IC716	YWNJM4565M	IC
IC717	YWCXD1175AM	IC
IC718	YWSC7S04F	IC
IC719	YWMC74HC244F	IC
IC720	YWL7A1121	LSI
IC721	UPD74HC4053G	IC
IC722	YWNJM4565M	IC
IC723	YWCXD1175AM	IC
IC724,725	YWSC7S04F	IC
IC726,727	YWMC74HC153F	IC
IC728-739	YWM5M4C500AL	IC
IC740	YWM60065702	LSI
IC741	YWSC7S04F	IC
IC742	YWM51272FP	IC
IC744	YWNJM2244M	IC
IC745	YWSC7S08F	IC
IC746,747	YWSC7S04F	IC
IC748	YWSC7S08F	IC
IC749,750	YWSC7S04F	IC
IC751	YWSC7S08F	IC
IC752	YWSC7S04F	IC
IC753	TC5081AP	IC
IC754	MN67603NS	IC
IC755	YWMC74HC00AF	IC
IC756	MC74HC4040F	IC
IC757	YWMC74HC74AF	IC
IC758	UPD74HC4053G	IC
IC759	TC5081AP	IC
IC760	MN67603NS	IC
IC761	TC5081AP	IC
IC762	MN67603NS	IC
IC763	YWMC74HC86F	IC
IC764	YWSC7S08F	IC
IC765	YWSC7S04F	IC
IC766	UPD74HC4053G	IC
IC767	YWMC74HC164F	IC
IC768	YWMC74HC14F	IC
IC769	YWMC74HC20F	IC
IC770	YWMC74HC02AF	IC
IC771	YWSC7S04F	IC
IC773	YWMC74HC74AF	IC
IC774	YWSC7S32FER	IC
IC775-777	YWSC7S04F	IC
IC778	YWTC4S81FR	IC
IC901	M38003M6SPA	Lsi
IC902	MB90077PF104	IC
IC903	M51951AMLW	IC
IC904	YWMSM62X42BR	IC
IC905	YWMC74HC393F	IC
IC906	MC74HC245AF	IC
IC907,908	MC74HC138AF	IC
IC909	YWMC74HC32AF	IC
IC910	YWMC74HC08AF	IC
IC911	YWM582C51AFP	IC
IC912	MB90077PF104	IC

REF.NO.	PART NO.	DESCRIPTION
IC913	CXK5864BSPL	IC
IC914	YWMC74HC244F	IC
IC915	MC74HC174AF	IC
IC916	YWMC145407F	IC
IC917	MC74HC374AF	IC
IC918	YWMC74HC04AF	IC
IC920	YWMC74HC74AF	IC
IC921	MN53007LVW1	IC
IC923	MC74HC4538F	IC
IC924	YWTC4W53FL	IC
IC925	MN676021PPS	IC
IC926	YWSC7S04F	IC
IC927	YWMC74HC244F	IC
IC928	YWMC74HC04AF	IC
IC929	YWMC74HC74AF	IC
IC931	M51951AMLW	IC
IC932	YWSC7S08F	IC
Q1-18	2SC2412-QRS	Transistor
Q19-21	2SA1037-QRS	Transistor
Q22-24	2SC2412-QRS	Transistor
Q70-75	2SC2412-QRS	Transistor
Q76	2SA1037-QRS	Transistor
Q77,78	2SC2412-QRS	Transistor
Q79	2SA1037-QRS	Transistor
Q80,81	2SC2412-QRS	Transistor
Q82-90	2SA1037-QRS	Transistor
Q91,92	2SC2412-QRS	Transistor
Q100-105	2SC2412-QRS	Transistor
Q108	2SC2412-QRS	Transistor
Q110	2SA1037-QRS	Transistor
Q111-115	2SC2412-QRS	Transistor
Q116	2SA1037-QRS	Transistor
Q117-120	2SC2412-QRS	Transistor
Q121	2SA1037-QRS	Transistor
Q122-125	2SC2412-QRS	Transistor
Q126	2SA1037-QRS	Transistor
Q127,129	2SC2412-QRS	Transistor
Q130,300	2SC2412-QRS	Transistor
Q301-303	2SC2412-QRS	Transistor
Q306	2SC2412-QRS	Transistor
Q307	2SA1037-QRS	Transistor
Q310-313	2SC2412-QRS	Transistor
Q314	2SA1037-QRS	Transistor
Q315-318	2SC2412-QRS	Transistor
Q319	2SA1037-QRS	Transistor
Q320-323	2SC2412-QRS	Transistor
Q324	2SA1037-QRS	Transistor
Q325	2SC2412-QRS	Transistor
Q400	2SC2412-QRS	Transistor
Q500-503	2SC2412-QRS	Transistor
Q506	2SC2412-QRS	Transistor
Q507	2SA1037-QRS	Transistor
Q510-513	2SC2412-QRS	Transistor
Q514	2SA1037-QRS	Transistor
Q515-518	2SC2412-QRS	Transistor

REF.NO.	PART NO.	DESCRIPTION
Q519	2SA1037-QRS	Transistor
Q520-523	2SC2412-QRS	Transistor
Q524	2SA1037-QRS	Transistor
Q525	2SC2412-QRS	Transistor
Q700-707	2SC2412-QRS	Transistor
Q708-711	2SK209-GR	Transistor
Q712-715	2SC2412-QRS	Transistor
Q717-719	2SC2412-QRS	Transistor
Q720	2SA1037-QRS	Transistor
Q721	2SC2412-QRS	Transistor
Q722	2SA1037-QRS	Transistor
Q723-725	2SC2412-QRS	Transistor
Q729	2SC2412-QRS	Transistor
Q901	2SA1037-QRS	Transistor
Q902	2SC2412-QRS	Transistor
Q903,904	2SA1037-QRS	Transistor
Q905	2SC2411	Transistor
Q906-908	2SC2412-QRS	Transistor
Q909	2SA1037-QRS	Transistor
Q910,911	2SC2412-QRS	Transistor
Q912,913	2SA1037-QRS	Transistor
Q914,915	2SK209-GR	Transistor
Q916	2SC2411	Transistor
Q917,928	2SC2412-QRS	Transistor
Q929	2SC2412-QRS	Transistor
D1-11	YWDA204K	Diode
D70	YWDA204K	Diode
D71	YWDAN212K	Diode
D72,73	YWDA204K	Diode
D101,103	YWDAN212K	Diode
D200,201	YWDAN212K	Diode
D301-303	YWDAN212K	Diode
D400	YWDAN212K	Diode
D501-503	YWDAN212K	Diode
D700-707	MA372	Diode
D708,709	YWDA204K	Diode
D712,714	YWDAN212K	Diode
D901	YWDAN212K	Diode
D902	YWRB715FT106	Diode
D903	YWDAN212K	Diode
D904	HZ3CLL	Diode
D905,906	YWDAN212K	Diode
D907,908	MA372	Diode
D910,911	MA372	Diode
D912,913	YWDAN212K	Diode
D917-919	YWDAN212K	Diode
R1	YF2116222GT	Carbon 2.2K ohms 1/10W
R2	YF2116104JT	Carbon 100K ohms 1/10W
R3	YF2116101JT	Carbon 100 ohms 1/10W
R4,5	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R6	YF2116101JT	Carbon 100 ohms 1/10W
R7,8	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R9	YF2116101JT	Carbon 100 ohms 1/10W
R10,11	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R12	YF2116101JT	Carbon 100 ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	
R13,14	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R15	YF2116101JT	Carbon	100 ohms 1/10W
R16,17	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R18	YF2116101JT	Carbon	100 ohms 1/10W
R19,20	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R21	YF2116101JT	Carbon	100 ohms 1/10W
R22,23	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R24	YF2116101JT	Carbon	100 ohms 1/10W
R25,26	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R27	YF2116101JT	Carbon	100 ohms 1/10W
R28,29	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R30	YF2116222GT	Carbon	2.2K ohms 1/10W
R31	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R32,33	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R34	YF2116104JT	Carbon	100K ohms 1/10W
R35	YF2116224JT	Carbon	220K ohms 1/10W
R36	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R37	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R38	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R39	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R40	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R41	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R42	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R43	YF2116822JT	Carbon	8.2K ohms 1/10W
R44	YW2116242JT	Carbon	2.4K ohms 1/10W
R45	YF2116152JT	Carbon	1.5K ohms 1/10W
R47,49	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R51	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R70	YF2116101JT	Carbon	100 ohms 1/10W
R71	YF2116273GT	Carbon	27K ohms 1/10W
R72	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R73,74	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R75	-ERJ6GEYJ391V	Carbon	390 ohms 1/10W
R76	YF2116561JT	Carbon	560 ohms 1/10W
R77	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R78	YF2116104JT	Carbon	100K ohms 1/10W
R79	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R80	YF2116222GT	Carbon	2.2K ohms 1/10W
R81	YFR1220P203D	Metal	20K ohms
R82	YWR1220P474D	Metal	470K ohms
R83	YWR1220P622D	Metal	6.2K ohms
R84	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R85	YWR1220P242D	Metal	2.4K ohms
R86	YF2116270JT	Carbon	27 ohms 1/10W
R87	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R88	YF2116152JT	Carbon	1.5K ohms 1/10W
R89	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R90,91	YF2116101JT	Carbon	100 ohms 1/10W
R92,93	YF21162R2JT	Carbon	2.2 ohms 1/10W
R94	ERJ14YJ680	Carbon	68 ohms 1/4W
R95	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R96	ERJ6GEYJ473	Carbon	47K ohms 1/10W
R97	YF2116273GT	Carbon	27K ohms 1/10W
R98,99	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R100	YF2116104JT	Carbon	100K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	
R101	YWR1220P161D	Metal	160 ohms
R102	ERJ6GEYJ271	Carbon	270 ohms 1/10W
R103	YF2116222GT	Carbon	2.2K ohms 1/10W
R104	YF2116511JT	Carbon	510 ohms 1/10W
R105	YWR1220P102D	Metal	1K ohms
R106	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R107	YWR1220P102D	Metal	1K ohms
R108	-ERJ6GEYJ391V	Carbon	390 ohms 1/10W
R109	YF2116681JT	Carbon	680 ohms 1/10W
R110	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R111,112	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R113	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R114	YF2116682JT	Carbon	6.8K ohms 1/10W
R115	YF2116754JT	Carbon	750K ohms 1/10W
R116,119	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R129	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R130	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R133	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R134	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R135	YF2116272JT	Carbon	2.7K ohms 1/10W
R136	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R137	YF2116754JT	Carbon	750K ohms 1/10W
R138	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R139	ERJ6GEYJ563	Carbon	56K ohms 1/10W
R140	ERJ6GEYJ682	Carbon	6.8K ohms
R141	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R142	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R143	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R145	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R146	YF2116332JT	Carbon	3.3K ohms 1/10W
R147	ERJ6GEYJ512	Carbon	5.1K ohms 1/10W
R148	L311J682G332	Carbon	3.3K ohms
R149,150	YF2116222GT	Carbon	2.2K ohms 1/10W
R151	YF2116151JT	Carbon	150 ohms 1/10W
R152	YW2116620JT	Carbon	62 ohms 1/10W
R153	YF2116682JT	Carbon	6.8K ohms 1/10W
R154	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R155	YF2116122JT	Carbon	1.2K ohms 1/10W
R156	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R159	YWR1220P102D	Metal	1K ohms
R160	YF2116433GT	Carbon	43K ohms 1/10W
R161	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R162	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R164,165	YWR1220P102D	Metal	1K ohms
R166	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R167,168	ERJ6GEYJ271	Carbon	270 ohms 1/10W
R169	YF2116122JT	Carbon	1.2K ohms 1/10W
R171	YFR1220P222D	Metal	2.2K ohms
R172	YF2116331JT	Carbon	330 ohms 1/10W
R173	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R174,175	YF2116332JT	Carbon	3.3K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	
R176	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R177	YF2116332JT	Carbon	3.3K ohms 1/10W
R178,179	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R180	YF2116561JT	Carbon	560 ohms 1/10W
R181	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R182	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R183	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R184	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R185	YWR1220P102D	Metal	1K ohms
R186	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R187	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R188	YF2116332JT	Carbon	3.3K ohms 1/10W
R189,190	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R191	YF2116561JT	Carbon	560 ohms 1/10W
R192	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R193	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R194	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R195	YWR1220P102D	Metal	1K ohms
R196	YF2116622JT	Carbon	6.2K ohms 1/10W
R197	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R198	YF2116332JT	Carbon	3.3K ohms 1/10W
R199,200	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R201	YF2116561JT	Carbon	560 ohms 1/10W
R202	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R203	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R204	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R205,206	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R207	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R208	-ERJ6GEYJ391V	Carbon	390 ohms 1/10W
R209	YF2116152JT	Carbon	1.5K ohms 1/10W
R210	YF2116474JT	Carbon	470K ohms 1/10W
R213	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R214,215	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R219-227	YF2116222GT	Carbon	2.2K ohms 1/10W
R228	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R229	YF2116561JT	Carbon	560 ohms 1/10W
R230	YF2116332JT	Carbon	3.3K ohms 1/10W
R231	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R232	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R233	YF2116332JT	Carbon	3.3K ohms 1/10W
R234,235	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R238,239	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R240	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R241,243	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R244-246	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R300	YF2116104JT	Carbon	100K ohms 1/10W
R301	YWR1220P161D	Metal	160 ohms
R302	ERJ6GEYJ271	Carbon	270 ohms 1/10W
R303	YF2116222GT	Carbon	2.2K ohms 1/10W
R304	YF2116511JT	Carbon	510 ohms 1/10W
R305	YWR1220P102D	Metal	1K ohms
R306	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R307	YWR1220P102D	Metal	1K ohms
R308	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R309	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R310	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R311	YF2116754JT	Carbon	750K ohms 1/10W
R312,315	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R325	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R326	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R329	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R330	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R331	YF2116272JT	Carbon	2.7K ohms 1/10W
R332	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R333	YF2116754JT	Carbon	750K ohms 1/10W
R334	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R335	ERJ6GEYJ563	Carbon	56K ohms 1/10W
R336	L311J682G332	Carbon	6.8K ohms
R337	ERJ6GEYJ333	Carbon	33K ohms 1/10W
R338	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R339	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R341	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R342	YF2116332JT	Carbon	3.3K ohms 1/10W
R343	ERJ6GEYJ512	Carbon	5.1K ohms 1/10W
R344	L311J682G332	Carbon	6.8K ohms
R345,346	YF2116222GT	Carbon	2.2K ohms 1/10W
R347	YF2116151JT	Carbon	150 ohms 1/10W
R348	YW2116620JT	Carbon	62 ohms 1/10W
R349	YF2116682JT	Carbon	6.8K ohms 1/10W
R350	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R351	YF2116122JT	Carbon	1.2K ohms 1/10W
R352	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R355	YWR1220P102D	Metal	1K ohms
R356	YF2116433GT	Carbon	43K ohms 1/10W
R357	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R358	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R360,361	YWR1220P102D	Metal	1K ohms
R362	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R367	YFR1220P222D	Metal	2.2K ohms
R368	YF2116331JT	Carbon	330 ohms 1/10W
R369	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R370,371	YF2116332JT	Carbon	3.3K ohms 1/10W
R372	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R373	YF2116332JT	Carbon	3.3K ohms 1/10W
R374,375	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R376	YF2116561JT	Carbon	560 ohms 1/10W
R377	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R378	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R379	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R380	YWR1220P102D	Metal	1K ohms
R381	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R382	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R383	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R384	YF2116332JT	Carbon	3.3K ohms 1/10W
R385,386	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R387	YF2116561JT	Carbon	560 ohms 1/10W
R388	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R389	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R390	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R391	YWR1220P102D	Metal	1K ohms

REF.NO.	PART NO.	DESCRIPTION	
R392	YF2116622JT	Carbon	6.2K ohms 1/10W
R393	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R394	YF2116332JT	Carbon	3.3K ohms 1/10W
R395,396	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R397	YF2116561JT	Carbon	560 ohms 1/10W
R398	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R399	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R400	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R407	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R408	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R409	YF2116123JT	Carbon	12K ohms 1/10W
R410	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R411	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R412,413	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R418	ERJ14YJ820	Carbon	82 ohms 1/4W
R419,421	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R422	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R423-425	YF2116101JT	Carbon	100 ohms 1/10W
R426	YF2116200JT	Carbon	20 ohms 1/10W
R429	YF2116822JT	Carbon	8.2K ohms 1/10W
R430	YF2116104JT	Carbon	100K ohms 1/10W
R431	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R434	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R436	YF2116101JT	Carbon	100 ohms 1/10W
R437	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R442	YF2116562JT	Carbon	5.6K ohms 1/10W
R445	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R446	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R448	YF2116561JT	Carbon	560 ohms 1/10W
R449,450	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R451	YF2116101JT	Carbon	100 ohms 1/10W
R452	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R453	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R457,458	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R500	YF2116104JT	Carbon	100K ohms 1/10W
R501	YWR1220P161D	Metal	160 ohms
R502	ERJ6GEYJ271	Carbon	270 ohms 1/10W
R503	YF2116222GT	Carbon	2.2K ohms 1/10W
R504	YF2116511JT	Carbon	510 ohms 1/10W
R505	YWR1220P102D	Metal	1K ohms
R506	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R507	YWR1220P102D	Metal	1K ohms
R508	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R509	ERJ6GEYJ221	Carbon	220 ohms 1/10W
R510	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R511	YF2116754JT	Carbon	750K ohms 1/10W
R512,515	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R525	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R526	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R529	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R530	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R531	YF2116272JT	Carbon	2.7K ohms 1/10W
R532	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R533	YF2116754JT	Carbon	750K ohms 1/10W
R534	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R535	ERJ6GEYJ563	Carbon	56K ohms 1/10W
R536	L311J682G332	Carbon	6.8K ohms
R537	ERJ6GEYJ333	Carbon	33K ohms 1/10W
R538	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R539	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R541	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R542	YF2116332JT	Carbon	3.3K ohms 1/10W
R543	ERJ6GEYJ512	Carbon	5.1K ohms 1/10W
R544	L311J682G332	Carbon	6.8K ohms
R545,546	YF2116222GT	Carbon	2.2K ohms 1/10W
R547	YF2116151JT	Carbon	150 ohms 1/10W
R548	YW2116620JT	Carbon	62 ohms 1/10W
R549	YF2116682JT	Carbon	6.8K ohms 1/10W
R550	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R551	YF2116122JT	Carbon	1.2K ohms 1/10W
R552	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R555	YWR1220P102D	Metal	1K ohms
R556	YF2116433GT	Carbon	43K ohms 1/10W
R557	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R558	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R560,561	YWR1220P102D	Metal	1K ohms
R562	ERJ6GEY0R00	Carbon	1 ohms 1/10W
R567	YFR1220P222D	Metal	2.2K ohms
R568	YF2116331JT	Carbon	330 ohms 1/10W
R569	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R570,571	YF2116332JT	Carbon	3.3K ohms 1/10W
R572	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R573	YF2116332JT	Carbon	3.3K ohms 1/10W
R574,575	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R576	YF2116561JT	Carbon	560 ohms 1/10W
R577	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R578	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R579	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R580	YWR1220P102D	Metal	1K ohms
R581	ERJ6GEYJ302	Carbon	3K ohms 1/10W
R582	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R583	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R584	YF2116332JT	Carbon	3.3K ohms 1/10W
R585,586	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R587	YF2116561JT	Carbon	560 ohms 1/10W
R588	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R589	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R590	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R591	YWR1220P102D	Metal	1K ohms
R592	YF2116622JT	Carbon	6.2K ohms 1/10W
R593	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R594	YF2116332JT	Carbon	3.3K ohms 1/10W
R595,596	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R597	YF2116561JT	Carbon	560 ohms 1/10W
R598	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R599	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R600	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R607	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R608	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R609	YF2116123JT	Carbon	12K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
R610	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R738	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R611	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R739	YF2116332JT	Carbon 3.3K ohms 1/10W
R612,613	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R740	YF2116104JT	Carbon 100K ohms 1/10W
R618,619	YF2116272JT	Carbon 2.7K ohms 1/10W	R741	ERJ6GEYJ302	Carbon 3K ohms 1/10W
R620	R1220P681D	Metal 680 ohms	R742	ERJ6GEYJ105	Carbon 1M ohms 1/10W
R621	YWR1220P152D	Metal 1.5K ohms	R743	YF2116104JT	Carbon 100K ohms 1/10W
R622	ERJ6GEYJ271	Carbon 270 ohms 1/10W	R744	YF2116101JT	Carbon 100 ohms 1/10W
R624	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R745	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R625	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R746	YF2116101JT	Carbon 100 ohms 1/10W
R628	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R747	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R629	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R748	ERJ6GEYJ105	Carbon 1M ohms 1/10W
R630	YF2116104JT	Carbon 100K ohms 1/10W	R749,750	YF2116104JT	Carbon 100K ohms 1/10W
R631	YWR1220P102D	Metal 1K ohms	R751	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R632,633	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R752	YF2116332JT	Carbon 3.3K ohms 1/10W
R634	YF2116101JT	Carbon 100 ohms 1/10W	R753	ERJ6GEYJ302	Carbon 3K ohms 1/10W
R637-640	ERJ6GEYJ221	Carbon 220 ohms 1/10W	R754	YF21162R2JT	Carbon 2.2 ohms 1/10W
R650	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R755	YF2116912GT	Carbon 9.1K ohms 1/10W
R652	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R756	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R653	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R760,761	YF2116101JT	Carbon 100 ohms 1/10W
R655	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R762	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R656	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R763	YF2116332JT	Carbon 3.3K ohms 1/10W
R658	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R764	YF2116104JT	Carbon 100K ohms 1/10W
R660	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R765	ERJ6GEYJ302	Carbon 3K ohms 1/10W
R661	YF2116104JT	Carbon 100K ohms 1/10W	R766	ERJ6GEYJ105	Carbon 1M ohms 1/10W
R663,664	YF2116101JT	Carbon 100 ohms 1/10W	R767	YF2116104JT	Carbon 100K ohms 1/10W
R665	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R768	YF2116101JT	Carbon 100 ohms 1/10W
R668	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R769	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R670,671	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R770,772	ERJ6GEYJ223	Carbon 22K ohms 1/10W
R700	YF2116222GT	Carbon 2.2K ohms 1/10W	R774,776	ERJ6GEYJ223	Carbon 22K ohms 1/10W
R701	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R778,780	ERJ6GEYJ223	Carbon 22K ohms 1/10W
R702	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R782	ERJ6GEYJ223	Carbon 22K ohms 1/10W
R703	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R785,786	YF2116151JT	Carbon 150 ohms 1/10W
R704	ERJ6GEYJ560	Carbon 56 ohms 1/10W	R789	YF2116151JT	Carbon 150 ohms 1/10W
R705	YF2116222GT	Carbon 2.2K ohms 1/10W	R793-800	YF2116101JT	Carbon 100 ohms 1/10W
R706	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R803-805	YF2116151JT	Carbon 150 ohms 1/10W
R707	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R806,807	YF2116331JT	Carbon 330 ohms 1/10W
R708	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R808	YF2116561JT	Carbon 560 ohms 1/10W
R709	YFR1220P222D	Metal 2.2K ohms	R809	YF2116682JT	Carbon 6.8K ohms 1/10W
R710	YWR1220P182D	Metal 1.8K ohms	R810	YF2116104JT	Carbon 100K ohms 1/10W
R711	YWR1220P561D	Metal 560 ohms	R811	ERJ6GEYJ302	Carbon 3K ohms 1/10W
R712	ERJ6GEYJ560	Carbon 56 ohms 1/10W	R812	ERJ6GEYJ105	Carbon 1M ohms 1/10W
R713	YF2116222GT	Carbon 2.2K ohms 1/10W	R813	YF2116104JT	Carbon 100K ohms 1/10W
R714	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R814,815	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R715	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R816	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R716	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R817	ERJ14YJ680	Carbon 68 ohms 1/4W
R717	ERJ6GEYJ560	Carbon 56 ohms 1/10W	R819	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R718	YF2116222GT	Carbon 2.2K ohms 1/10W	R820	YF2116222GT	Carbon 2.2K ohms 1/10W
R719	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R821	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R720	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R822	YF2116222GT	Carbon 2.2K ohms 1/10W
R721	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R834	YF2116152JT	Carbon 1.5K ohms 1/10W
R722	ERJ6GEYJ560	Carbon 56 ohms 1/10W	R835	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R723-726	YF2116101JT	Carbon 100 ohms 1/10W	R836	YF2116681JT	Carbon 680 ohms 1/10W
R727	YF21162R2JT	Carbon 2.2 ohms 1/10W	R853	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R628	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R854	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R731-734	YF2116101JT	Carbon 100 ohms 1/10W	R855	YF2116681JT	Carbon 680 ohms 1/10W
R737	YF2116151JT	Carbon 150 ohms 1/10W			

REF.NO.	PART NO.	DESCRIPTION	
R873	YF2116222GT	Carbon	2.2K ohms 1/10W
R874	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R875	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R876,879	YF2116273GT	Carbon	27K ohms 1/10W
R880	ERJ6GEYJ153	Carbon	15K ohms 1/10W
R881,882	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R887	ERJ14YJ680	Carbon	68 ohms 1/4W
R888	YF2116222GT	Carbon	2.2K ohms 1/10W
R891	YF2116471JT	Carbon	470 ohms 1/10W
R892	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R893	YWR1220P122D	Metal	1.2K ohms
R894	ERJ6GEYJ560	Carbon	56 ohms 1/10W
R895	YF2116122JT	Carbon	1.2K ohms 1/10W
R896	YF2116270JT	Carbon	27 ohms 1/10W
R897	YF2116332JT	Carbon	3.3K ohms 1/10W
R898,899	YF2116222GT	Carbon	2.2K ohms 1/10W
R901	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R902,903	ERJ6GEY0R00	Carbon	1 ohms 1/10W
R904,905	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R906	YF2116122JT	Carbon	1.2K ohms 1/10W
R907	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R908,909	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R910	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R911	YF2116151JT	Carbon	150 ohms 1/10W
R912	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R913,914	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R915	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R916	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R917	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W
R918	ERJ6GEYJ563	Carbon	56K ohms 1/10W
R919	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R920	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R921	ERJ6GEYJ563	Carbon	56K ohms 1/10W
R922	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R923	YF2116122JT	Carbon	1.2K ohms 1/10W
R924	YF2116222GT	Carbon	2.2K ohms 1/10W
R925	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R926	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R927	YF2116222GT	Carbon	2.2K ohms 1/10W
R928	YF2116152JT	Carbon	1.5K ohms 1/10W
R929	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R930	YF2116242JT	Carbon	2.4K ohms 1/10W
R932	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R933	YF2116101JT	Carbon	100 ohms 1/10W
R934	YF2116304JT	Carbon	300K ohms 1/10W
R935	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R936	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R937	ERJ6GEYJ303	Carbon	30K ohms 1/10W
R938	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R939	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R940	YF2116104JT	Carbon	100K ohms 1/10W
R941	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R942	YF2116101JT	Carbon	100 ohms 1/10W
R943,944	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R945	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R946	ERJ6GEYJ103	Carbon	10K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	
R947	YF2116332JT	Carbon	3.3K ohms 1/10W
R948	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R949	YF2116332JT	Carbon	3.3K ohms 1/10W
R950,951	ERJ6GEYJ202	Carbon	2K ohms 1/10W
R952	YF2116332JT	Carbon	3.3K ohms 1/10W
R953,954	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R956,957	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R958,959	YF2116101JT	Carbon	100 ohms 1/10W
R961,963	YF2116101JT	Carbon	100 ohms 1/10W
R964-968	YF2116101JT	Carbon	100 ohms 1/10W
R969-973	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R974	YF2116101JT	Carbon	100 ohms 1/10W
R975	ERJ6GEYJ105	Carbon	1M ohms 1/10W
R976	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R977,978	YF2116104JT	Carbon	100K ohms 1/10W
R982	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R984	YF2116104JT	Carbon	100K ohms 1/10W
R985	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R986	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R987-994	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R995,996	YF2116101JT	Carbon	100 ohms 1/10W
VR100	EVM1DSW30B54	Variable Resistor	50K ohms
VR101	EVM1DSW30B14	Variable Resistor	10K ohms
VR102	EVM1DSW30B23	Variable Resistor	2K ohms
VR103	EVM1DSW30BQ2	Variable Resistor	470 ohms
VR104	EVM1DSW30B13	Variable Resistor	1K ohms
VR105-107	EVM1DSW30B14	Variable Resistor	10K ohms
VR108	EVM1DSW30B53	Variable Resistor	5K ohms
VR300	EVM1DSW30B54	Variable Resistor	50K ohms
VR301	EVM1DSW30B14	Variable Resistor	10K ohms
VR302	EVM1DSW30B23	Variable Resistor	2K ohms
VR304	EVM1DSW30B13	Variable Resistor	1K ohms
VR305-307	EVM1DSW30B14	Variable Resistor	10K ohms
VR308	EVM1DSW30B53	Variable Resistor	5K ohms
VR500	EVM1DSW30B54	Variable Resistor	50K ohms
VR501	EVM1DSW30B14	Variable Resistor	10K ohms
VR502	EVM1DSW30B23	Variable Resistor	2K ohms
VR504	EVM1DSW30B13	Variable Resistor	1K ohms
VR505-507	EVM1DSW30B14	Variable Resistor	10K ohms
VR508	EVM1DSW30B53	Variable Resistor	5K ohms
VR702,703	EVM1DSW30B23	Variable Resistor	2K ohms
VR704	EVM1DSW30B13	Variable Resistor	1K ohms
VR705,706	EVM1DSW30B14	Variable Resistor	10K ohms
VR708,709	EVM1DSW30B14	Variable Resistor	10K ohms
VR710,711	EVM1DSW30B24	Variable Resistor	20K ohms
VR901	EVM1DSW30B14	Variable Resistor	10K ohms
Z700-702	YWRKM10L152F	Block Resistor	
C2,4	YF400104FZT	Ceramic	0.1 µF
C6,8	YF400104FZT	Ceramic	0.1 µF
C10,12	YF400104FZT	Ceramic	0.1 µF
C14,16	YF400104FZT	Ceramic	0.1 µF
C18	YF400104FZT	Ceramic	0.1 µF
C19	ECEA1AKA470	Electrolytic	47 µF 10V
C20,21	YF400104FZT	Ceramic	0.1 µF
C22,23	ECEA1AKA470	Electrolytic	47 µF 10V

REF.NO.	PART NO.	DESCRIPTION	
C24-33	YF400104FZT	Ceramic	0.1 µF
C35	ECEA1AKA470	Electrolytic	47 µF 10V
C36	YF400103XKT	Ceramic	0.01 µF
C37	YF400104FZT	Ceramic	0.1 µF
C38-40	ECEA1AKA470	Electrolytic	47 µF 10V
C41-44	YF400104FZT	Ceramic	0.1 µF
C45	ECEA1AKA470	Electrolytic	47 µF 10V
C46	YF400104FZT	Ceramic	0.1 µF
C47	ECEA1AKA470	Electrolytic	47 µF 10V
C48-57	YF400104FZT	Ceramic	0.1 µF
C70,71	ECEA1AKA470	Electrolytic	47 µF 10V
C72	YF400201CHJT	Ceramic	200 pF
C73	ECEA1HKA010	Electrolytic	1 µF 50V
C74	YF400101CHJT	Ceramic	100 pF
C75	ECEA1AKA470	Electrolytic	47 µF 10V
C76	YF400240CHJT	Ceramic	24 pF
C77	ECEA1AKA470	Electrolytic	47 µF 10V
C79	ECEA0JU471	Electrolytic	470 µF 6.3V
C82-85	ECEA1AKA470	Electrolytic	47 µF 10V
C87	YF400104FZT	Ceramic	0.1 µF
C88-96	ECEA1AKN220	Electrolytic	22 µF 10V
C100	YF400101CHJT	Ceramic	100 pF
C101	YF400330CHJT	Ceramic	33 pF
C102	ECEA1HKG010	Electrolytic	1 µF 50V
C103	YF400221CHJT	Ceramic	220 pF
C104,105	ECEA1AKA470	Electrolytic	47 µF 16V
C106,107	YF400104FZT	Ceramic	0.1 µF
C108	ECEA1HKGR47	Electrolytic	0.47 µF 16V
C109	ECEA1CKG100	Electrolytic	10 µF 16V
C110	YF400104FZT	Ceramic	0.1 µF
C111	ECEA1CKG100	Electrolytic	10 µF 16V
C112	YF400104FZT	Ceramic	0.1 µF
C113	ECEA1AKG470	Electrolytic	47 µF 10V
C114	YF400104FZT	Ceramic	0.1 µF
C115	ECEA1AKG470	Electrolytic	47 µF 10V
C116-118	YF400104FZT	Ceramic	0.1 µF
C119	ECEA1AKG470	Electrolytic	47 µF 10V
C123	YF400270CHJT	Ceramic	27 pF
C124	YF400103XKT	Ceramic	0.01 µF
C126	ECEA1AKA470	Electrolytic	47 µF 10V
C127-129	YF400104FZT	Ceramic	0.1 µF
C130	YW400102CHJT	Ceramic	1000 pF
C131	YF400681CHJT	Ceramic	680 µF 50V
C132	YW400102CHJT	Ceramic	1000 pF
C133-137	YF400104FZT	Ceramic	0.1 µF
C138	ECEA1AKG470	Electrolytic	47 µF 10V
C139	ECEA1HKG010	Electrolytic	1 µF 50V
C140	YF400104FZT	Ceramic	0.1 µF
C141	YF400101CHJT	Ceramic	100 pF
C142	YF400561CHJT	Ceramic	560 pF
C143	YW400050CHJT	Ceramic	5 pF
C144	YF400104FZT	Ceramic	0.1 µF
C146	YF400103XKT	Ceramic	0.01 µF
C147	YF400104FZT	Ceramic	0.1 µF
C148	YF400680CHJT	Ceramic	68 pF CH

REF.NO.	PART NO.	DESCRIPTION	
C149	YW400102CHJT	Ceramic	1000 pF
C150	ECEA0JKG101	Electrolytic	100 µF 6.3V
C151	ECEA1HKGR47	Electrolytic	0.47 µF 50V
C152,153	ECEA1HKG010	Electrolytic	1 µF 50V
C154	YF400101CHJT	Ceramic	100 pF
C155	YW400473XK	Ceramic	0.047 µF
C156,157	ECEA0JKG101	Electrolytic	100 µF 6.3V
C158	YF400104FZT	Ceramic	0.1 µF
C159	ECEA1AKG470	Electrolytic	47 µF 10V
C161	YW400102CHJT	Ceramic	1000 pF
C162	ECEA1AKA470	Electrolytic	47 µF 10V
C163	YF400104FZT	Ceramic	0.1 µF
C164	YF400151CHJT	Ceramic	150 pF
C165	YF400104FZT	Ceramic	0.1 µF
C166	ECEA1HKG010	Electrolytic	1 µF 50V
C168,169	ECEA1AKA470	Electrolytic	47 µF 10V
C170	ECEA1HKG010	Electrolytic	1 µF 50V
C172	ECEA1AKA470	Electrolytic	47 µF 10V
C173	ECEA1HKG010	Electrolytic	1 µF 50V
C175	ECEA1AKA470	Electrolytic	47 µF 10V
C176	YF400104FZT	Ceramic	0.1 µF
C177	YF400562XKT	Ceramic	5600 pF
C178	YF400471CHJT	Ceramic	470 pF
C179	YF400332XKT	Ceramic	3300 pF
C180	YF400152XKT	Ceramic	1500 pF
C181,182	ECEA1HKG010	Electrolytic	1 µF 50V
C183	YF400470CHJT	Ceramic	47 pF
C185	YF400104FZT	Ceramic	0.1 µF
C186	ECEA1AKA470	Electrolytic	47 µF 10V
C187	YW400102CHJT	Ceramic	1000 pF
C188	YF400104FZT	Ceramic	0.1 µF
C189	YF400391CHJT	Ceramic	390 pF
C190	YW400473XK	Ceramic	0.047 µF
C193	YF400104FZT	Ceramic	0.1 µF
C194	ECEA1AKA470	Electrolytic	47 µF 10V
C195	YF400104FZT	Ceramic	0.1 µF
C200-203	ECEA0JKA101	Electrolytic	100 µF 6.3V
C204	YF400221CHJT	Ceramic	220 pF
C205	YF400221CHJT	Ceramic	220 pF
C206	YW400102CHJT	Ceramic	1000 pF
C207	YF400104FZT	Ceramic	0.1 µF
C212	YF400103XKT	Ceramic	0.01 µF
C300	YF400101CHJT	Ceramic	100 pF
C301	YF400330CHJT	Ceramic	33 pF
C302	ECEA1HKG010	Electrolytic	1 µF 50V
C303	YF400221CHJT	Ceramic	220 pF
C304	ECEA1AKA470	Electrolytic	47 µF 10V
C305	ECEA1AKA470	Electrolytic	47 µF 10V
C306	YF400104FZT	Ceramic	0.1 µF
C307	YF400104FZT	Ceramic	0.1 µF

REF.NO.	PART NO.	DESCRIPTION	
C308	ECEA1HKGR47	Electrolytic	0.47 µF 50V
C309	ECEA1CKG100	Electrolytic	10 µF 16V
C310	YF400104FZT	Ceramic	0.1 µF
C311	ECEA1CKG100	Electrolytic	10 µF 16V
C312	YF400104FZT	Ceramic	0.1 µF
C313	ECEA1AKG470	Electrolytic	47 µF 10V
C314	YF400104FZT	Ceramic	0.1 µF
C315	ECEA1AKG470	Electrolytic	47 µF 10V
C316-318	YF400104FZT	Ceramic	0.1 µF
C319	ECEA1AKA470	Electrolytic	47 µF 10V
C323	YF400270CHJT	Ceramic	27 pF
C324	YF400103XKT	Ceramic	0.01 µF
C326	ECEA1AKA470	Electrolytic	47 µF 10V
C327-329	YF400104FZT	Ceramic	0.1 µF
C330	YW400102CHJT	Ceramic	1000 pF
C331	YF400681CHJT	Ceramic	680 µF 50V
C332	YW400102CHJT	Ceramic	1000 pF
C333-337	YF400104FZT	Ceramic	0.1 µF
C338	ECEA1AKG470	Electrolytic	47 µF 10V
C339	ECEA1HKG010	Electrolytic	1 µF 50V
C340	YF400104FZT	Ceramic	0.1 µF
C341	YF400101CHJT	Ceramic	100 pF
C342	YF400561CHJT	Ceramic	560 pF
C343	YW400050CHJT	Ceramic	5 pF
C344	YF400104FZT	Ceramic	0.1 µF
C345	YW400102CHJT	Ceramic	1000 pF
C350	ECEA0JKG101	Electrolytic	100 µF 6.3V
C351	ECEA1HKGR47	Electrolytic	0.47 µF 50V
C352,353	ECEA1HKG010	Electrolytic	1 µF 50V
C354	YF400101CHJT	Ceramic	100 pF
C355	YW400473XK	Ceramic	0.047 µF
C356,357	ECEA0JKG101	Electrolytic	100 µF 6.3V
C358	YF400104FZT	Ceramic	0.1 µF
C359	ECEA1AKG470	Electrolytic	47 µF 10V
C360	YW400102CHJT	Ceramic	1000pF
C362	ECEA1AKA470	Electrolytic	47 µF 10V
C363	YF400104FZT	Ceramic	0.1 µF
C364	YF400151CHJT	Ceramic	150 pF
C365	YF400104FZT	Ceramic	0.1 µF
C366	ECEA1HKG010	Electrolytic	1 µF 50V
C368	ECEA1AKA470	Electrolytic	47 µF 10V
C369	ECEA1HKG010	Electrolytic	1 µF 50V
C371	ECEA1AKA470	Electrolytic	47 µF 10V
C372	ECEA1HKG010	Electrolytic	1 µF 50V
C374,378	ECEA1AKA470	Electrolytic	47 µF 10V
C379	YW400102CHJT	Ceramic	1000pF
C380-382	YF400104FZT	Ceramic	0.1 µF
C383	YF400562XKT	Ceramic	5600 pF
C384	YF400471CHJT	Ceramic	470 pF
C385	YF400391CHJT	Ceramic	390 pF
C386	YF400221CHJT	Ceramic	220 pF
C387	ECEA1AKA470	Electrolytic	47 µF 10V
C388	YW400473XK	Ceramic	0.047 µF
C390	YF400104FZT	Ceramic	0.1 µF
C400	YF400104FZT	Ceramic	0.1 µF
C401-405	YF400104FZT	Ceramic	0.1 µF
C406	YF400101CHJT	Ceramic	100 pF
C407,408	YF400104FZT	Ceramic	0.1 µF
C409	ECEA0JKA101	Electrolytic	100 µF 6.3V
C412	YF400101CHJT	Ceramic	100 pF
C414	YF400104FZT	Ceramic	0.1 µF
C415	ECEA0JKA101	Electrolytic	100 µF 6.3V
C416	ECEA0JKA101	Electrolytic	100 µF 6.3V
C500	YF400101CHJT	Ceramic	100 pF
C501	YF400330CHJT	Ceramic	33 pF
C502	ECEA1HKG010	Electrolytic	1 µF 50V
C503	YF400221CHJT	Ceramic	220 pF
C504,505	ECEA1AKA470	Electrolytic	47 µF 10V
C506	YF400104FZT	Ceramic	0.1 µF
C507	YF400104FZT	Ceramic	0.1 µF
C508	ECEA1HKGR47	Electrolytic	0.47 µF 50V
C509	ECEA1CKG100	Electrolytic	10 µF 16V
C510	YF400104FZT	Ceramic	0.1 µF
C511	ECEA1CKG100	Electrolytic	10 µF 16V
C512	YF400104FZT	Ceramic	0.1 µF
C513	ECEA1AKG470	Electrolytic	47 µF 10V
C514	YF400104FZT	Ceramic	0.1 µF
C515	ECEA1AKG470	Electrolytic	47 µF 10V
C516-518	YF400104FZT	Ceramic	0.1 µF
C519	ECEA1AKA470	Electrolytic	47 µF 10V
C523	YF400270CHJT	Ceramic	27 pF
C524	YF400103XKT	Ceramic	0.01 µF
C526	ECEA1AKA470	Electrolytic	47 µF 10V
C527-529	YF400104FZT	Ceramic	0.1 µF
C530	YW400102CHJT	Ceramic	1000 pF
C531	YF400681CHJT	Ceramic	680 pF 50V
C532	YW400102CHJT	Ceramic	1000 pF
C533-537	YF400104FZT	Ceramic	0.1 µF
C538	ECEA1AKG470	Electrolytic	47 µF 10V
C539	ECEA1HKG010	Electrolytic	1 µF 50V
C540	YF400104FZT	Ceramic	0.1 µF
C541	YF400101CHJT	Ceramic	100 pF
C542	YF400561CHJT	Ceramic	560 pF
C543	YW400050CHJT	Ceramic	5 pF
C544	YF400104FZT	Ceramic	0.1 µF
C545	YW400102CHJT	Ceramic	1000pF
C550	ECEA0JKG101	Electrolytic	100 µF 6.3V
C551	ECEA1HKGR47	Electrolytic	0.47 µF 50V
C552,553	ECEA1HKG010	Electrolytic	1 µF 50V
C554	YF400101CHJT	Ceramic	100 pF
C555	YW400473XK	Ceramic	0.047 µF
C556,557	ECEA0JKG101	Electrolytic	100 µF 6.3V
C558	YF400104FZT	Ceramic	0.1 µF
C559	ECEA1AKG470	Electrolytic	47 µF 10V
C560	YW400102CHJT	Ceramic	1000 pF
C562	ECEA1AKA470	Electrolytic	47 µF 10V
C563	YF400104FZT	Ceramic	0.1 µF
C564	YF400151CHJT	Ceramic	150 pF
C565	YF400104FZT	Ceramic	0.1 µF
C566	ECEA1HKG010	Electrolytic	1 µF 50V

REF.NO.	PART NO.	DESCRIPTION	
C568	ECEA1AKA470	Electrolytic	47 µF 10V
C569	ECEA1HKG010	Electrolytic	1 µF 50V
C571	ECEA1AKA470	Electrolytic	47 µF 10V
C572	ECEA1HKG010	Electrolytic	1 µF 50V
C574,578	ECEA1AKA470	Electrolytic	47 µF 10V
C579	YW400102CHJT	Ceramic	1000 pF
C580-582	YF400104FZT	Ceramic	0.1 µF
C583	YF400562XKT	Ceramic	5600 pF
C584	YF400471CHJT	Ceramic	470 pF
C585	YF400391CHJT	Ceramic	390 pF
C586	YF400221CHJT	Ceramic	220 pF
C587	ECEA1AKA470	Electrolytic	47 µF 10V
C588	YW400473XK	Ceramic	0.047 µF
C590	YF400104FZT	Ceramic	0.1 µF
C650-652	YF400681CHJT	Ceramic	680 µF 50V
C653	YF400562XKT	Ceramic	5600 pF
C654,655	YW400102CHJT	Ceramic	1000 pF
C656	ECEA0JKA101	Electrolytic	100 µF 6.3V
C657	YW400102CHJT	Ceramic	1000 pF
C658,659	YF400104FZT	Ceramic	0.1 µF
C700,701	YF400104FZT	Ceramic	0.1 µF
C702	ECEA1CKA100	Electrolytic	10 µF 16V
C703	YF400222XKT	Ceramic	2200 pF
C704	ECEA1AKA470	Electrolytic	47 µF 10V
C705	YF400104FZT	Ceramic	0.1 µF
C706	ECEA1AKA470	Electrolytic	47 µF 10V
C707	YF400104FZT	Ceramic	0.1 µF
C708	ECEA1AKA470	Electrolytic	47 µF 10V
C709	YF400104FZT	Ceramic	0.1 µF
C710	YF400390CHJT	Ceramic	39 pF
C711-715	YF400104FZT	Ceramic	0.1 µF
C716	ECEA1CKA100	Electrolytic	10 µF 16V
C717	YF400222XKT	Ceramic	2200 pF
C718	ECEA1AKA470	Electrolytic	47 µF 10V
C719	YF400104FZT	Ceramic	0.1 µF
C720,721	ECEA1AKA470	Electrolytic	47 µF 10V
C722-724	YF400104FZT	Ceramic	0.1 µF
C725	ECEA1AKA470	Electrolytic	47 µF 10V
C726	YF400104FZT	Ceramic	0.1 µF
C727	YF400330CHJT	Ceramic	33 pF
C728	YF400104FZT	Ceramic	0.1 µF
C729	ECEA1AKA470	Electrolytic	47 µF 10V
C730-732	YF400104FZT	Ceramic	0.1 µF
C733	ECEA1CKA100	Electrolytic	10 µF 16V
C734	YF400222XKT	Ceramic	2200 pF
C735	ECEA1AKA470	Electrolytic	47 µF 10V
C736	YF400104FZT	Ceramic	0.1 µF
C737	ECEA1AKA470	Electrolytic	47 µF 10V
C738	YF400104FZT	Ceramic	0.1 µF
C739	ECEA1AKA470	Electrolytic	47 µF 10V
C740	YF400104FZT	Ceramic	0.1 µF
C741	ECEA1AKA470	Electrolytic	47 µF 10V
C742	YF400104FZT	Ceramic	0.1 µF
C743	YF400390CHJT	Ceramic	39 pF
C744	ECEA1AKA470	Electrolytic	47 µF 10V
C745-749	YF400104FZT	Ceramic	0.1 µF
C750	ECEA1CKA100	Electrolytic	10 µF 16V
C751	YF400222XKT	Ceramic	2200 pF
C752	ECEA1AKA470	Electrolytic	47 µF 10V
C753	YF400104FZT	Ceramic	0.1 µF
C754	ECEA1AKA470	Electrolytic	47 µF 10V
C755	YF400104FZT	Ceramic	0.1 µF
C756	ECEA1AKA470	Electrolytic	47 µF 10V
C757,758	YF400104FZT	Ceramic	0.1 µF
C759	YF400390CHJT	Ceramic	39 pF
C760,761	YF400104FZT	Ceramic	0.1 µF
C762	ECEA0JKA101	Electrolytic	100 F 6.3V
C763-767	YF400104FZT	Ceramic	0.1 µF
C768	ECEA1HKG010	Electrolytic	1 µF 50V
C769	YF400222XKT	Ceramic	2200 pF
C770	YF400104FZT	Ceramic	0.1 µF
C771-773	YF400331CHJT	Ceramic	330 pF
C774,775	YF400104FZT	Ceramic	0.1 µF
C776-778	YF400331CHJT	Ceramic	330 pF
C779	YF400104FZT	Ceramic	0.1 µF
C780	YF400222XKT	Ceramic	2200 pF
C781	ECEA1HKG010	Electrolytic	1 µF 50V
C782	ECEA0JKA101	Electrolytic	100 µF 6.3V
C783-788	YF400104FZT	Ceramic	0.1 µF
C789	ECEA1HKG010	Electrolytic	1 µF 50V
C790	YF400222XKT	Ceramic	2200 pF
C791	YF400331CHJT	Ceramic	330 pF
C792	YF400104FZT	Ceramic	0.1 µF
C793,794	YF400331CHJT	Ceramic	330 pF
C795,796	YF400104FZT	Ceramic	0.1 µF
C797	ECEA0JKA101	Electrolytic	100 µF 6.3V
C798-800	YF400104FZT	Ceramic	0.1 µF
C801	ECEA0JKA101	Electrolytic	100 µF 6.3V
C802-804	YF400104FZT	Ceramic	0.1 µF
C805	ECEA0JKA101	Electrolytic	100 µF 6.3V
C806-808	YF400104FZT	Ceramic	0.1 µF
C809	ECEA0JKA101	Electrolytic	100 µF 6.3V
C810-815	YF400104FZT	Ceramic	0.1 µF
C816	ECEA0JKA101	Electrolytic	100 µF 6.3V
C817,818	YF400104FZT	Ceramic	0.1 µF
C819	ECEA1HKA010	Electrolytic	1 µF 50V
C820	YF400332XKT	Ceramic	3300 pF
C821	YF400331CHJT	Ceramic	330 pF
C822	YF400104FZT	Ceramic	0.1 µF
C823,824	YF400331CHJT	Ceramic	330 pF
C825,826	ECEA1AKA470	Electrolytic	47 µF 10V
C827	ECEA0JKA101	Electrolytic	100 µF 6.3V
C828	YF400104FZT	Ceramic	0.1 µF
C829	ECEA0JKA101	Electrolytic	100 µF 6.3V
C830,831	YF400104FZT	Ceramic	0.1 µF
C832	YW400473XK	Ceramic	0.047 µF
C833	ECEA1CKA100	Electrolytic	10 µF 16V
C834	YW400102CHJT	Ceramic	1000 pF
C835	YW400473XK	Ceramic	0.047 µF
C836-839	YF400104FZT	Ceramic	0.1 µF
C844-846	YF400104FZT	Ceramic	0.1 µF

REF.NO.	PART NO.	DESCRIPTION	
C847	ECEA1AKA470	Electrolytic	47 µF 10V
C848	YF400104FZT	Ceramic	0.1 µF
C849	ECEA1AKA470	Electrolytic	47 µF 10V
C851	YW400473XK	Ceramic	0.047 µF
C852,854	YF400104FZT	Ceramic	0.1 µF
C856	YW400473XK	Ceramic	0.047 µF
C857	ECEA1CKA100	Electrolytic	10 µF 16V
C858	YF400104FZT	Ceramic	0.1 µF
C859	YW400102CHJT	Ceramic	1000 pF
C860	YF400270CHJT	Ceramic	27 pF
C865	ECEA0JU102	Electrolytic	1000 µF 6.3V
C868-872	ECEA1AKA470	Electrolytic	47 µF 10V
C873	ECEA0JU102	Electrolytic	1000 µF 6.3V
C874,879	YF400104FZT	Ceramic	0.1 µF
C880-882	YF400104FZT	Ceramic	0.1 µF
C883	YF400221CHJT	Ceramic	220 pF
C884-886	YF400104FZT	Ceramic	0.1 µF
C887	YF400222XKT	Ceramic	2200 pF
C888-891	YF400104FZT	Ceramic	0.1 µF
C892	YF400271CHJT	Ceramic	270 pF
C894-896	YF400104FZT	Ceramic	0.1 µF
C897	YF400221CHJT	Ceramic	220 pF
C898	YF400104FZT	Ceramic	0.1 µF
C899	YF400221CHJT	Ceramic	220 pF
C900,901	ECEA1AKA470	Electrolytic	47 µF 10V
C902	YF400104FZT	Ceramic	0.1 µF
C903	YF400430CHJT	Ceramic	43pF (CH)
C904	ECEA1HKA010	Electrolytic	1 µF 50V
C905	ECEA0JU332	Electrolytic	3300 µF 6.3V
C906	YF400104FZT	Ceramic	0.1 µF
C907,908	YF400300CHJT	Ceramic	30 pF
C909	YF400104FZT	Ceramic	0.1 µF
C910,911	ECEA1AKA470	Electrolytic	47 µF 10V
C912,913	YF400104FZT	Ceramic	0.1 µF
C914	ECEA1VKG4R7	Electrolytic	4.7 µF 35V
C916-918	YF400104FZT	Ceramic	0.1 µF
C920,921	YF400104FZT	Ceramic	0.1 µF
C922	YF400470CHJT	Ceramic	47 pF
C923	YF400104FZT	Ceramic	0.1 µF
C924	ECEA1AKA470	Electrolytic	47 µF 10V
C925,926	YF400104FZT	Ceramic	0.1 µF
C927-930	ECEA1EKA100	Electrolytic	10 µF 25V
C931	YF400104FZT	Ceramic	0.1 µF
C932,933	ECEA1AKA470	Electrolytic	47 µF 10V
C934	ECEA1HKG2R2	Electrolytic	2.2 µF 50V
C936	YW400131CHJT	Ceramic	130 pF
C937	ECEA1HKG2R2	Electrolytic	2.2 µF 50V
C938	YF400331CHJT	Ceramic	330 pF
C939	YF400221CHJT	Ceramic	220 pF
C940	YW400102CHJT	Ceramic	1000pF
C941	YF400104FZT	Ceramic	0.1 µF
C942	YF400561CHJT	Ceramic	560 pF
C944	YF400104FZT	Ceramic	0.1 µF
C945,946	YF400820CHJT	Ceramic	82 pF
C947	YF400101CHJT	Ceramic	100 pF
C948	ECEA1AKA470	Electrolytic	47 µF 10V
C949	YF400104FZT	Ceramic	0.1 µF
C951	YW400102CHJT	Ceramic	1000pF
C952	YF400100CHJT	Ceramic	10 pF
C953	YF400104FZT	Ceramic	0.1 µF
C954	ECEA1HKG2R2	Electrolytic	2.2 µF 50V
C955	YF400103XKT	Ceramic	0.01 µF
C956	ECEA1HKG2R2	Electrolytic	2.2 µF 50V
C957,958	YF400104FZT	Ceramic	0.1 µF
C959	ECEA1CKA220	Electrolytic	22 µF 16V
C960	ECEA1AKA470	Electrolytic	47 µF 10V
C961,962	YF400104FZT	Ceramic	0.1 µF
C964	YF400104FZT	Ceramic	0.1 µF
C965,966	YF400470CHJT	Ceramic	47 pF
C967	YF400201CHJT	Ceramic	200 pF
C968-970	YF400104FZT	Ceramic	0.1 µF
C972	YF400101CHJT	Ceramic	100 pF
C983,984	YF400104FZT	Ceramic	0.1 µF
CT100,300	ECRJA020E11	Trimmer Capacitor	
CT500	ECRJA020E11	Trimmer Capacitor	
CT901,902	ECRJA030E11W	Trimmer Capacitor	
L1-4	YWNL328R2J	Coil	8.2 µH
L70,71	YWNL328R2L	Coil	8.2 µH
L72	YWNL32560J	Coil	56 µH
L73	YWNL328R2L	Coil	8.2 µH
L74	YWNL32560J	Coil	56 µH
L100-105	YWNL328R2J	Coil	8.2 µH
L107	YWNL328R2J	Coil	8.2 µH
L108	YWNL32470J	Coil	47 µH
L109	YWNL328R2J	Coil	8.2 µH
L110	YWNL32150J	Coil	15 µH
L112,113	YWNL328R2J	Coil	8.2 µH
L114	EFDVN645A41E	Delay Line	
L300-304	YWNL328R2J	Coil	8.2 µH
L306	YWNL328R2J	Coil	8.2 µH
L307	YWNL32470J	Coil	47 µH
L308,311	YWNL328R2J	Coil	8.2 µH
L312	YWNL328R2J	Coil	8.2 µH
L500	YWNL328R2J	Coil	8.2 µH
L501-504	YWNL328R2J	Coil	8.2 µH
L506	YWNL328R2J	Coil	8.2 µH
L507	YWNL32470J	Coil	47 µH
L508	YWNL328R2J	Coil	8.2 µH
L511	YWNL328R2J	Coil	8.2 µH
L512	YWNL328R2J	Coil	8.2 µH
L700,701	YWNL328R2J	Coil	8.2 µH
L703-713	YWNL328R2J	Coil	8.2 µH
L714,715	EIC4EJ003E	Coil	
L716	YWNL328R2J	Coil	8.2 µH
L717	EIC4EJ003E	Coil	
L718-722	YWNL328R2J	Coil	8.2 µH
L723	EIC4EJ003E	Coil	
L724,725	YWNL328R2J	Coil	8.2 µH
L726	YWNL32470J	Coil	
L727-729	YWNL328R2J	Coil	8.2 µH

REF.NO.	PART NO.	DESCRIPTION	
L900,901	YWNL328R2J	Coil	8.2 µH
L902,903	YWNL32330J	Coil	33 µH
L904,905	YWNL328R2J	Coil	8.2 µH
L906	YWNL32100J	Coil	10 µH
L907,908	YWNL328R2J	Coil	8.2 µH
CF100,102	ELB4E524	Filter	
CF103,104	ELB4B551	Filter	
CF300,302	ELB4E524	Filter	
CF303,304	ELB4B551	Filter	
CF500,502	ELB4E524	Filter	
CF503,504	ELB4B551	Filter	
BZ1	YFPKM244A0	Buzzer	
BAT901	YWVL2330-1HF	Storage Battery	
SW901,902	ESD11V120	Slide Switch	
T111	YW29188EG	High Freq Transformer	
X1	YFCSB503F2	Crystal Oscillator	
X101,301	YFMS30917M10	Crystal Oscillator	
X501	YFMS30917M10	Crystal Oscillator	
X901	YWCSA4R91MG	Oscillator	
X902	YFMS30917M10	Crystal Oscillator	
X903	YWN8R4R40625	Crystal Oscillator	
CN1-4	YW530140410	4-pin Connector	
CN5	YW530141210	12-pin Connector	
CN6	YW530140810	8-pin Connector	
CN7	YW530141110	11-pin Connector	
CN8	YW530141510	15-pin Connector	
CN9	YW530140310	3-pin Connector	
CN10	YW530140710	7-pin Connector	
TP101-109	YWRCT2125TPV	Test-Pin	
TP301,302	YWRCT2125TPV	Test-Pin	
TP306,307	YWRCT2125TPV	Test-Pin	
TP400-402	YWRCT2125TPV	Test-Pin	
TP501,502	YWRCT2125TPV	Test-Pin	
TP504-507	YWRCT2125TPV	Test-Pin	
TP701-708	YWRCT2125TPV	Test-Pin	
TP901-903	YWRCT2125TPV	Test-Pin	
M36	YWA2QA0134A4	Electrode	

REF.NO.	PART NO.	DESCRIPTION	
SUB BOARD			
PCB7 (RTL)	YWJKYFS20E2A	Printed Circuit Board Assy	
IC1	YWMC74HC74AF	IC	
IC2	YWMC74HC00AF	IC	
IC3	YWMC74HC160F	IC	
IC4	YWMC74HC08AF	IC	
D1	YWDAN212K	Diode	
R1	YF2116101JT	Carbon	100 ohms 1/10W
R2	ERJ6GEYJ102	Carbon	1K ohms 1/10W
C1	ECEV0JV220	Electrolytic	22 µF 6.3V
C2	YF400104FZT	Ceramic	0.1 µF
C3	YW400102CHJT	Ceramic	1000 pF
CN1	YW90961010	10-pin Connector	
ACCESSORY PARTS/PACKAGING PARTS			
M51	YWV5PA0065A4	Rack Mount Angle	
M52	YWV8QA3049AN	Operating Instructions	
M53	XZB26X40C05	Polyethylene Bag	
M54	XZB55X71C1	Polyethylene Bag	
M55	YWT050803	Polyethylene Bag	
M56	YWT10X16C03	Polyethylene Bag	
M57	YWT20X35C03	Polyethylene Bag	
M58	YWV9CA2057AN	Packaging Assy	
M60	YWV8FA0200A4	Packaging Label	

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